Tracking Progress Over Time

State Sustainability Roadmaps, Adaptation Chapters

A product of the Integrated Climate Adaptation and Resiliency Program at the Governor's Office of Planning and Research

October 2018

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Executive Summary

In 2015, Governor Brown signed Senate Bill 246, which established the Integrated Climate Adaptation and Resiliency Program (ICARP) to develop a cohesive and coordinated response to the impacts of climate change across the state. During its first year, the program's Technical Advisory Council adopted a vision statement that expresses the characteristics of a resilient California, as well as principles that guide how adaptation actions should be implemented to achieve this vision (see page 5).

In an effort to track how public agency efforts are moving towards this vision, ICARP staff developed an adaptation evaluation framework. This report documents the origin, development, and pilot application of the final adaptation evaluation framework. The evaluation framework is meant to provide a flexible approach to evaluating different scales of government and different aspects of planning and implementation processes. Using this approach, various entities could use the framework to assess progress over time to determine whether they are moving forward from planning to implementation of adaptation efforts, and to identify common sticking points in the process.

To begin tracking state progress on adaptation planning and implementation, this evaluation framework has been applied to 16 department Sustainability Roadmaps. Initiated by Executive Order B-18-12, Sustainability Roadmaps are documents authored by state departments that own and operate facilities. The Roadmaps, which serve as progress reports towards meeting sustainability goals, are submitted to the State Government Operations Agency. With the signing of Executive Order B-30-15, which requires state agencies to incorporate climate considerations into planning and investment decisions, there arose an opportunity to integrate an adaptation chapter into the sustainability roadmaps. The evaluation framework developed by ICARP was then applied to these Sustainability Roadmap Adaptation Chapters.

While this report begins to track adaptation planning and actions for state owned facilities and operations, it does not provide a comprehensive assessment of all state adaptation and resilience activities. Most notably absent from this assessment is an evaluation of state policy and funding activities, which are captured through the state's adaptation plan, Safeguarding California, in response to AB 1482[1]. While state adaptation activities are responsive to different executive and legislative directives - and therefore captured through different reporting mechanisms – ICARP, through the Governor's Office of Planning and Research (OPR), is working with California Natural Resources Agency (CNRA) and the Government Operations Agency (GovOps) to align and coordinate these reporting

[1] Bill text: https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160AB1482

mechanisms. To this end, this report is a first step in aligning reporting requirements for Safeguarding (policy and funding) and Sustainable Roadmaps (operations).

The following key findings were found as a result of the 16 individual department Sustainability Roadmap Adaptation Chapter evaluations:

1. All departments are taking actions that correspond with the awareness stage, with a number of activities reflecting the characteristics across all three maturity levels (initiating, developing and standardizing).
2. The integration of Executive Order B-30-15 requirements into the Sustainability Roadmaps was a significant catalyst for initiating the integration of adaptation considerations into department planning.
3. To further align department Sustainability Roadmaps with state adaptation and resilience goals, additional detail is needed on addressing vulnerable communities and opportunities to support integrated climate actions across mitigation and adaptation.
4. Most departments are taking actions in the analysis phase, but a majority are still at the initiating maturity level.
5. While fewer actions are being taken in the action phase, there are a number of departments who are implementing ad hoc actions across state facilities.
6. To achieve a higher level of maturity in the analysis and action phases, more capacity is needed across departments.

Outcomes from the pilot application of the Adaptation Evaluation Framework include:

- Setting a baseline of adaptation efforts for State departments who own facilities, which will be updated every two years, inline with Roadmap submissions to GovOps.
- Informing the 2019 update to the adaptation chapter template, to better align department reporting and the ICARP adaptation tracking efforts.
- Helping departments identify next steps in their efforts to incorporate climate change into facilities management and operation, as well as into policies and programs.
- Alignment of state adaptation evaluation and reporting processes between OPR, GovOps, and CNRA

Adaptation Vision and Principles
Adopted by the ICARP Technical Advisory Council

All Californians thrive in the face of a changing climate. Leading with innovation, California meets the challenge of climate change by taking bold actions to protect our economy, our quality of life, and all people. The state's most **vulnerable communities** are prioritized in these actions. Working across all levels of government, the state is prepared for both gradual changes and extreme events. Climate change adaptation and mitigation is standard practice in government and business throughout the state. California meets these goals with urgency, while achieving the following long-term outcomes:

- All people and communities respond to changing average conditions, shocks, and stresses in a manner that minimizes risks to public health, safety, and economic disruption and maximizes equity and **protection of the most vulnerable**.
- Natural systems adjust and maintain functioning ecosystems in the face of change.
- Infrastructure and built systems withstand changing conditions and shocks, including changes in climate, while continuing to provide essential services.

Principles

1. Prioritize **integrated** climate actions, those that both reduce greenhouse gas emissions and build resilience to climate impacts, as well as actions that provide **multiple benefits**.
2. Prioritize actions that promote equity, foster community resilience, and **protect the most vulnerable**. Explicitly include communities that are disproportionately vulnerable to climate impacts.
3. Prioritize **natural and green infrastructure** solutions to enhance and protect natural resources, as well as urban environments. Preserve and restore ecological systems (or engineered systems that use ecological processes) that enhance natural system functions, services, and quality and that reduce risk, including but not limited to actions that improve water and food security, habitat for fish and wildlife, coastal resources, human health, recreation and jobs.
4. **Avoid maladaptation** by making decisions that do not worsen the situation or transfer the challenge from one area, sector, or social group to another. Identify and take all opportunities to prepare for climate change in all planning and investment decisions.
5. Base all planning, policy, and investment decisions on the **best-available science**, including local and traditional knowledge, including consideration of future climate conditions out to 2050 and 2100, and beyond.
6. Employ **adaptive and flexible governance** approaches by utilizing **collaborative partnership** across scales and between sectors to accelerate effective problem solving. Promote mitigation and adaptation actions at the regional and landscape scales.
7. Take **immediate actions** to reduce present and near future (within 20 years) climate change risks for all Californians; do so while also **thinking in the long term** and responding to continual changes in climate, ecology, and economics using adaptive management that incorporates regular monitoring.

Vulnerable Communities Definition

Climate vulnerability describes the degree to which natural, built, and human systems are at risk of exposure to climate change impacts. Vulnerable communities experience heightened risk and increased sensitivity to climate change and have less capacity and fewer resources to cope with, adapt to, or recover from climate impacts. These disproportionate effects are caused by physical (built and environmental), social, political, and/or economic factor(s), which are exacerbated by climate impacts. These factors include, but are not limited to, race, class, sexual orientation and identification, national origin, and income inequality.

I. Background

State Sustainability Roadmaps – Adaptation Chapters

Executive Order B-18-12 and the accompanying Green Building Action Plan require state agencies to reduce the environmental impacts of state operations by reducing greenhouse gas emissions, managing energy and water use, improving indoor air quality, generating onsite renewable energy when feasible, implementing environmentally preferable purchasing, and developing the infrastructure for electric vehicle charging stations at state facilities. Every two years, Sustainability Roadmaps are completed by state agencies and departments to report progress on, and clarify plans for, implementing EO B-18-12 and the Green Building Action Plan.

In 2015, Governor Brown signed Executive Order B-30-15, which requires State agencies to incorporate climate change into all planning and investment decisions. Guidance was provided by the Governor's Office of Planning and Research (OPR) to state agencies following the convening of a Technical Advisory Group. Using this guidance, the Government Operations Agency (GovOps) and OPR worked together to produce a reporting template (see Appendix B) for departments to use in completing the Adaptation Chapters of their Sustainability Roadmaps. As this was the first time many - but not all - departments considered climate impacts in their facility planning and operations, the Government Operations Agency worked with the Office of Technology to produce department-specific facility data sheets that pulled climate projection data from Cal-Adapt (cal-adapt.org) using the Cal-Adapt API (Application Programming Interface).

In accordance with the EO B-30-15 implementation guidance, "Planning and Investing for a Resilient California", the climate projections data used for the Sustainability Roadmaps were produced using a high emissions pathway (RCP 8.5) to project changing temperature, extreme heat, and precipitation out to years 2060 and 2100. Facility vulnerability data also included modeled inundation associated with extreme storm events under scenarios of .5, 1, and 1.41 meters of sea-level rise to introduce departments to the more robust sea-level rise vulnerability analysis called for in the State of California's Sea-Level Rise Guidance Document, in which analysis of 1.41 meters of sea-level rise is generally consistent with a medium-high risk aversion approach for assets in 2080.

Relationship to Safeguarding California Implementation

While the management and operations of state facilities is a crucial piece of adaptation planning, any evaluation of state adaptation efforts should also consider policy, programmatic, and funding actions. While this evaluation report does not provide a comprehensive evaluation of these activities, the Natural Resources Agency is developing the Safeguarding California Implementation Report to provide an update on how state agencies are meeting their program and policy goals committed to in the 2009, 2014, and 2018 strategies. The Safeguarding Implementation Report addresses the requirement in AB 1482 for an annual report to the Legislature on the actions taken by the applicable agencies to implement the Safeguarding California Plan.

The implementation report will consist of summaries for the 13 sections of the plan that detailed 81 recommendations and principles for state agency adaptation actions. The Natural Resources Agency is working with lead agencies to quantitatively and qualitatively analyze and summarize the status of

thousands of next steps and ongoing actions identified in the 2018, 2014, and 2009 adaptation strategies. The implementation report will also feature a preliminary assessment of barriers to implementation that was designed to align with the Adaptation Chapter analysis structure.

The Sustainability Roadmap Adaptation Chapters and the Safeguarding California Implementation Report provide transparent information about how the state is adapting and increasing resilience to climate change in facility operation and policy, respectively. As the first iteration of annual reporting processes, the 2018 release of both the Adaptation Chapters and the Implementation Report will link these complementary efforts. OPR, CNRA, and GovOps will continue to work together to align these reports to track the progress that state agencies are making on climate adaptation initiatives.

Figure 1 provides an overview of the agencies and departments that participated in the Safeguarding California Implementation Report and the state Sustainability Roadmaps process.

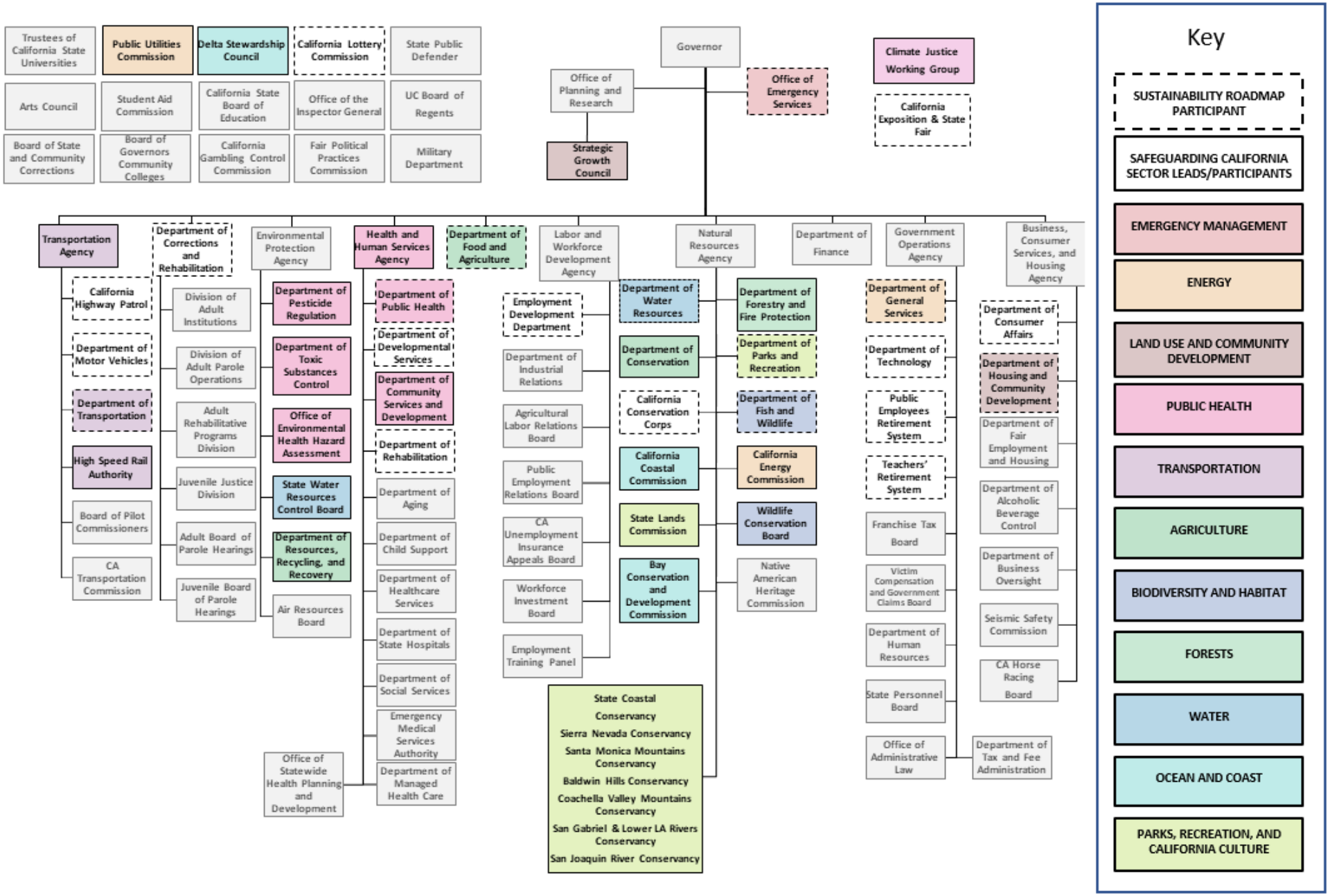


Figure 1. Organizational chart of the executive branch that identifies agency and department participation in Safeguarding California and/or the Sustainability Roadmaps

II. Adaptation Evaluation Framework

With guidance from the ICARP Technical Advisory Council, program staff created the adaptation evaluation framework with the goal of developing a tool that could assess state and local adaptation efforts over time. The framework intentionally allows for the evaluation of adaptation across two dimensions: (1) the type of activity along a continuum of planning to implementation and (2) the maturity of effort along a continuum from "initiating" to "standardizing". This multi-dimensional framework allows agencies to track their implementation progress over time, as well as identify both short term and long-term resource needs to build internal capacity. It is the intent of ICARP program staff that this framework be adaptable for use at local and regional scales in order to provide a consistent tracking and monitoring approach for public agencies across the state.

The framework presented in this report is adapted from a framework developed as part of the Third California Climate Assessment[2], which has since been applied to multiple efforts including a series of Bay Area "barriers" case study reports[3], a water provider preparedness study[4], and a study on characteristic adaptation finance challenges faced by local governments[5]. In addition to grounding the evaluation framework in applied research, ICARP program staff held a public workshop with local, state, and federal practitioners to collect input and suggestions. This workshop lead to the inclusion of the maturity aspect of the framework. Each component of the framework includes a set of questions and descriptive characteristics to help categorize the placement of each department based on their Sustainability Roadmap Adaptation Chapters (see Appendix B for evaluation framework questions).

Phases of the Process

The first component of the framework evaluates progress along a continuum from awareness building, to planning, to implementation (see Figure 2). Three phases and their sub steps are diagrammed in a cyclical fashion in the graphic to the right.

It is important to note that in practice these steps do not always follow a linear process, but rather an iterative process where actions are often taken in two or more phases simultaneously.

Figure 2. Three phases and sub-steps of the evaluation framework

[2] Ekstrom, Julia A., Susanne C. Moser, and Margaret Torn. 2011. *Barriers to Climate Change Adaptation: A Diagnostic Framework*. California Energy Commission. Publication Number: CEC-500-2011-004.
[3] Moser, Susanne C., and Julia A. Ekstrom. 2012. Identifying and Overcoming Barriers to Climate Change Adaptation in San Francisco Bay: Results from Case Studies. California Energy Commission. Publication number: CEC-500-2012-034.
[4] Ekstrom, J.A., Bedsworth, L. & Fencl, A. Climatic Change (2017) 140: 467. https://doi.org/10.1007/s10584-016-1870-3
[5] Moser, Susanne C., J.A. Ekstrom, J. Kim, S. Heitsch. (Susanne Moser Research & Consulting, Department of Water Resources, Local Government Commission and ICF). 2018. Adaptation Finance Challenges: Characteristic Patterns Facing California Local Governments and Ways to Overcome Them. California's Fourth Climate Change Assessment, California Natural Resources Agency. Publication number: CCCA4-CNRA2018-007.

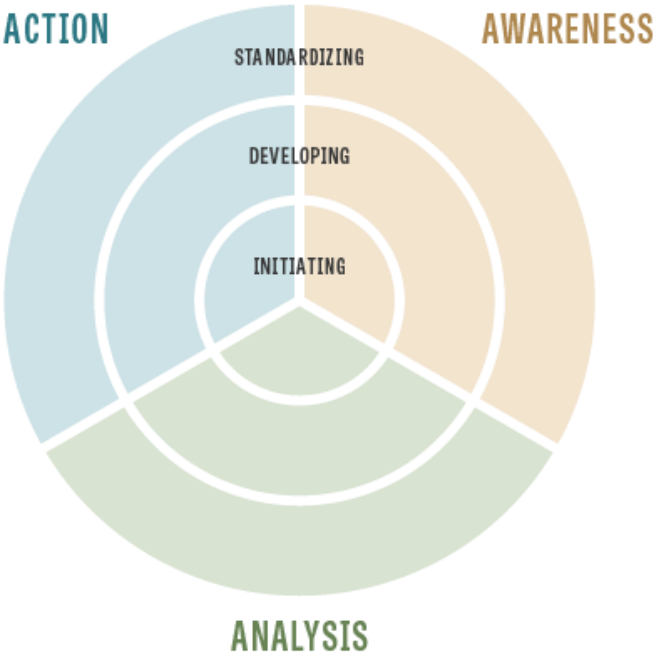


Figure 3. Three maturity levels spanning across each phase of the process

Maturity Measure

The second component of the evaluation framework is the assignment of a maturity level within each phase. The maturity levels are overlaid onto the process phases in Figure 3.

This component of the evaluation framework is an addition to the initial framework developed through the Third Assessment, resulting from the ICARP Technical Advisory Council public workshop meeting in April 2018.

Evaluation Methods

For each of the above framework components, a set of evaluation questions and maturity characteristics are used. These questions and maturity characteristics were developed to provide insight into the type and maturity of adaptation effort, as well as to assess these actions against the guiding vision and principles set forth by the ICARP Technical Advisory Council.[6] These characteristics are listed and described below, and can be found as part of the categorization of questions and characteristics, which can be found in Appendix A.

- Coordination and Collaboration
  - Agencies should coordination and collaborate across sectors and scales and seek out existing community-based organizations or agencies that organize vulnerable groups.
- Organizational Capacity [7]
  - Agencies should have support and engagement from executive staff and should have dedicated funding and staff to implement and monitor progress of adaptation plans over time.
- Equity and Community Resilience
  - Actions should be prioritized that promote equity, foster community resilience, and protect the most vulnerable. Planning and implementation processes should explicitly include communities that are disproportionately vulnerable to climate impacts.
- Metrics/Using Best Available Science

[6] These principles draw from those established by Planning and Investing for a Resilience California, guidance produced by the Governor's Office of Planning and Research in response to Governor Brown's Executive Order B-30-15

[7] Organizational capacity is not a principle identified in the Technical Advisory Council vision and principles or the EO B-30-15 guidance, but was chosen to track capacity needs across agencies.

  - Agencies should base all planning, policy, and investment decisions on the best-available science, including local and traditional knowledge, including consideration of future climate conditions out to 2050 and 2100, and beyond.
- Integrated approach
  - Plans should identify and consider alternatives, and quantify and evaluate co-benefits such as greenhouse gas reduction, public health conditions (including air and water quality, habitat protection, and resource protection), and benefits to vulnerable populations or individuals' health, living conditions and well-being.
- Natural Infrastructure
  - Agencies should identify and evaluate natural infrastructure solutions and alternatives during the planning process.

III. Summary and Key Findings

Table 1 identifies where each department lies in the evaluation of their Sustainability Roadmap Adaptation Chapter. Darker colors represent further achievement of the characteristics at that maturity level. The following key findings are organized by phase and are not numbered according to level of importance.

It is important to note that the below summary and following individual department evaluations do not consider actions outside of the content described in each department's Sustainability Roadmap Adaptation Chapter. This evaluation does not take into consideration the energy, green operations, water efficiency, or zero emissions vehicles chapters of each department's Sustainability Roadmap.

Department	AWARENESS			ANALYSIS			ACTION		
	I	D	S	I	D	S	I	D	S
CDFW									
Caltrans									
DWR									
CHP									
DPR									
DOR									
Cal OES									
CLC									
CDPH									
CALPERS									
DCA									
CDCR									
EDD									
DGS									
DMV									
CDFA									
Cal Expo									
CDT									
CCC									

Table 1. Summary of all individual department evaluation findings.

AWARENESS

Key Finding #1: All departments are taking actions that correspond with the awareness stage, with a number of activities reflecting the characteristics across all three maturity levels (initiating, developing and standardizing).

Key Finding #2: The integration of Executive Order B-30-15 requirements into the Sustainability Roadmaps was a significant catalyst for initiating the integration of adaptation considerations into department planning.

In accordance with the evaluation framework, to reach maturity level 3 (standardizing) in the awareness phase, a department should have completed an in-depth assessment of all relevant climate impacts across all assets and plans. Across the department evaluations, it was most commonly found that this was the first time many departments incorporated climate change impacts and adaptation strategies in their facility operations and maintenance planning efforts. Departments that are taking the lead in the awareness phase are in the process of conducting in-depth vulnerability assessments, however each department is considered to be making progress in this phase upon the completion of the Sustainability Roadmap Adaptation Chapter.

Key Finding #3: To further align department Sustainability Roadmaps with state adaptation and resilience goals, additional detail is needed on addressing vulnerable communities and opportunities to support integrated climate actions across mitigation and adaptation.

From the evaluation of this phase, several areas could use more attention in the next update of department Sustainability Roadmaps in order to align with the guiding vision and principles of the ICARP Technical Advisory Council and the EO B-30-15 guidance. The first is a more comprehensive analysis of department operations, investments, and facilities on the state's most vulnerable populations. Along with a more in depth qualitative assessment, this could include identifying populations using tools such as the Healthy Places Index, Regional Opportunity Index, or another method that incorporates population-specific information on vulnerabilities and climate risk. In the next iteration of Sustainability Roadmaps, departments should identify and discuss opportunities for integrated approaches to climate impacts that include co-benefits such as greenhouse gas reduction, health benefits, and more.

Phase Highlights

- The California Department of Corrections and Rehabilitation is currently preparing a Climate Action Plan (initiated in 2016) that will provide guidance in project-level impacts related to climate change for CDCR's facility portfolio, and identify potential climate adaptation strategies.
- The Department of Water Resources began a Climate Change Vulnerability Assessment in 2014, which is now in draft form. This assessment is now being followed by the development of a Climate Adaptation Plan.
- The California Department of Transportation (Caltrans) is currently conducting climate change vulnerability assessments of the state highway system in each of Caltrans' 12 districts. Caltrans intends to complete all 12 assessments by December 2019 and develop adaptation guidance by early 2021.
- The California Department of Fish and Wildlife created 19 ecoregional reports that summarize climate change projections, vulnerabilities of species and vegetation communities, and adaptation opportunities for each ecoregion.

ANALYSIS

Key Finding #4: Most departments are also taking actions in the analysis phase, but a majority are still at the initiating maturity level.

Based on the evaluation framework, reaching maturity level 3 (standardizing) in the analysis phase requires a completed or adopted comprehensive plan to respond to climate change impacts. This plan should include strategies that are based on an in-depth vulnerability assessment, and strategies should be evaluated and assessed for things such as feasibility (political, technicality, prioritization relative to other efforts), co-benefits, unintended consequences, and more (see Appendix A). Based on the evaluation across departments, most departments are considered to be initiating in the analysis phase, as many have not completed a comprehensive plan that responds to an in-depth assessment of impacts. However, most of the Sustainability Roadmap Adaptation Chapters do include potential strategies to respond to the impacts in the Roadmap Chapter. Departments that are in maturity levels 2 and 3 are taking on more comprehensive assessments and preparing plans that are based on these assessments.

Phase Highlights

- The California Department of Corrections and Rehabilitation is currently preparing a Climate Action Plan (initiated in 2016) that will build upon an in-depth vulnerability assessment prepared by an outside consultant. This plan will identify potential climate adaptation strategies that could be implemented to address these increased risks and improve the resilience of CDCR facilities and operations.
- The California Conservation Corps achieved a higher maturity level by establishing and committing to clear screening and evaluation criteria for each project. The CCC has committed to using the screening criteria outlined in the Sustainability Roadmap Adaptation Chapter, and identified different priorities for projects including natural infrastructure solutions, solutions that benefit the state's most vulnerable, integrated solutions, solutions with high rate of savings, and flexible and adaptive approaches.

ACTION

Key Finding #5: While fewer actions are being taken in the implementation phase, there are a number of departments who are implementing ad hoc actions across state facilities.

At a maturity level 3 (standardizing) in the action phase, a department should be implementing strategies that have been outlined from the processes and plans that took place in the awareness and analysis phases. However, as these phases are not linear in practice, almost all departments were taking ad hoc actions to plans for the impacts of climate change. As departments move further along in the analysis phase, it is likely that they will move further in the action phase by tracking their implementation efforts and accumulating greater capacity to implement planned strategies.

Key Finding #6: To achieve a higher level of maturity in the analysis and action phases, more capacity is needed across departments.

Based on the evaluation framework, reaching maturity level 3 (standardizing) in the analysis and action phases requires departments to have dedicated staff to conduct evaluations of both potential and implemented strategies as well as ongoing funding to support implementation. While few departments discussed staff capacity in their Adaptation Chapters, the topic has been of conversation across agencies and departments as a barrier to completion of adaptation actions. Additionally, many departments discuss deferred maintenance costs as a barrier to adaptation strategy implementation.

Phase Highlights

- While the department has not yet begun implementing adaptation strategies, the California Department of Parks and Recreation (CDPR) has incorporated climate change adaptation as priority selection criterion for allocation of capital outlay and deferred maintenance infrastructure investment funds, which will apply to future strategies.
- Common strategies that are currently being implemented often have mitigation cobenefits as the strategies are primarily a result of LEED certification. Some examples include solar canopy installation over parking lots, LED lighting retrofits, and water reuse systems.
- Almost all departments that reported potential impacts from flooding or sea level rise reported considering facility relocation. Currently, the California Highway Patrol is planning and assessing viable locations for the relocation of one of its facilities.
- The California Conservation Corps reports a need for additional staff and funding to develop and manage projects that respond to flood risks that will be developed by the CCC Facilities Unit in conjunction with organizational stakeholders.

IV. Next Steps

Informing Revisions to the Sustainability Roadmap Adaptation Chapter Template
Using the results from this evaluation framework application, the Government Operations Agency (GovOps) and Governor's Office of Planning and Research (OPR) will work together to incorporate areas of the evaluation framework that were not incorporated in to the 2017 Adaptation Chapter Templates. Revisions will focus on structuring the template to more accurately represent department efforts, as well as better identify areas of need and capacity building for departments. Departments who participate in the Sustainable Buildings Working Group will be engaged in update process.

Coordinating Evaluation with Safeguarding Implementation Tracking
The OPR, GovOps, and California Natural Resources Agency (CNRA) will continue to work together to align tracking and reporting of state agency plans and actions to respond to climate change impacts. This will include streamlining of Safeguarding California implementation tracking and Sustainability Roadmaps Adaptation Chapter evaluations.

Other Opportunities for Evaluation Framework Application
OPR will work with state and local partners to identify paths for applications of this framework to additional efforts on the local and regional scales. This may include General Plans, Local Coastal Programs, and Local Hazard Mitigation Plans.

Opportunities to provide technical assistance to departments
OPR and GovOps will work together to identify ways to meaningfully engage with and support departments as they continue with their adaptation planning and implementation efforts. This may include strategies such as one-on-one engagement, group meetings, and webinars to help identify barriers and solutions to short- and long-term planning, and implementation efforts.

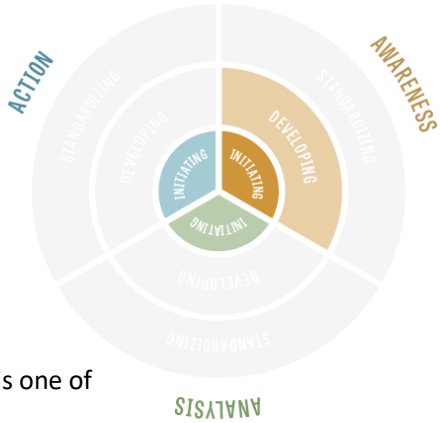
V. Appendices

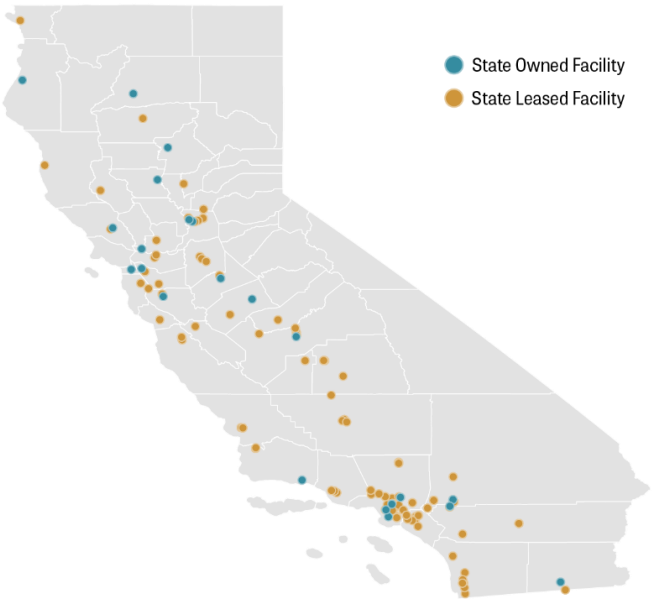
Appendix A: Individual Department Evaluations

Disclaimer

The following individual department evaluations were developed by applying the evaluation framework to each department's Sustainability Roadmap Adaptation Chapter. The below evaluations *do not* consider department actions outside of the Sustainability Roadmap Adaptation Chapters including the energy, green operations, water efficiency, and zero emissions vehicle chapters. Additionally, the individual department evaluations are not presented in any particular order.

California Employment Development Department





Department Overview

The California Employment Development Department (EDD) is one of the largest state departments, which administers workforce services, unemployment insurance, disability insurance, employment tax collection programs, and related administration, technology, policy, accountability, and compliance activities to citizens and employers throughout California. Every local area, as outlined in the Workforce Innovation and Opportunity Act (WIOA), must have at least one comprehensive America's Job Center of California, which provides customers access to all appropriate job services in a single location. The majority of EDD's real estate portfolio is office space leased from private ownership. EDD's owned buildings present unique challenges to climate change adaptation. Many have extensive deferred maintenance requirements which must be prioritized before significant progress can be made toward sustainability and climate change mitigation improvements.

Existing Facilities[†]	
Owned	23
Leased	196
Total Square Feet	1,462,865

Phase Evaluation

Awareness
The evaluation of the California Employment Development Department (EDD) Adaptation Chapter suggests that much of the Department's work currently takes place in the awareness phase of the evaluation framework. The department is considered to be between a level 1 (initiating) and 2 (developing) in the awareness phase. The department could advance in this phase by identifying and prioritizing integrated approaches or strategies with mitigation co-benefits, identifying and coordinating with additional state or local agency partners and plans, and analyzing agency impacts and opportunities to aid vulnerable communities.
Analysis
EDD is categorized at maturity level 1 (initiating) in the analysis phase, as this is the department's first time looking at climate impacts on facilities. The department has yet to complete a comprehensive plan that includes commitments to actions. However, EDD has commissioned an infrastructure study with the DGS to evaluate vulnerabilities of the Central Office computer room and recommend improvements to mitigate risk of failure.
Action

[†] "Existing facilities" may include but are not limited to any of the following facility types: office buildings, parking spaces, storage facilities (refrigerated and nonrefrigerated), warehouses, electric vehicle charging stations, air monitoring stations, airports, marinas, greenhouses, forest management sites, field offices, laboratories, communication towers, etc.

From the information provided in the Sustainability Roadmap Adaptation Chapter, the department is categorized at maturity level 1 (initiating) in the action phase. While the department does not have a clear implementation pathway for its strategies, the department is completing adaptation actions on an ad hoc basis.

Impacts and Strategy Summaries

Impacts	Strategies
Changing Temperature and Extreme Heat	
- Aging HVAC systems at these buildings may struggle during high heat days to maintain office and data closet temperatures. - Could result in reduced occupant comfort and increased utility and operating costs. - In a worst-case scenario, equipment failure could require that EDD close operations until a repair could be effected. - Extended periods of extreme heat may lead to accelerated degradation of buildings systems, including HV AC equipment, roofing materials, parking lots, and paint, resulting in increased overall facility maintenance costs. - The Rancho Cordova offices serve as the business recovery locations for EDD's Central Office, which hosts critical functions for EDD to maintain operations. If these sites are compromised by sustained increases in temperatures and extreme heat events, they may be unavailable for business recovery operations. - EDD's warehouse operations are not climate controlled, which could pose additional risk to staff, equipment, and warehoused materials.	- EDD has commissioned an infrastructure study with the DGS to evaluate vulnerabilities of the Central Office computer room and recommend improvements to mitigate risk of failure. - EDD must ensure that the lessors of these locations plan appropriately to accommodate changing climate conditions. If they are unable to provide adequate support, EDD must identify alternate locations for business recovery functions. EDD is continuously evaluating its recovery facilities as part of its Continuity of Operations Plan. - Proactive replacement of these systems with more efficient models will help to mitigate the impact of heat-related climate change. EDD has been working with the DGS to perform studies and upgrades of these systems; however, these projects are both time-intensive and costly, which poses challenges in accomplishing necessary building improvements. - EDD is currently pursuing energy efficiency upgrades, such as LED lighting retrofits, which will help balance electrical loads as HV AC usage increases. Additionally, EDD has installed window tinting at all EDD-owned facilities for the combined benefit of increased security, reduced ambient heat, and energy savings. - In the most extreme heat increase scenario, EDD could have to dramatically reevaluate its approach to facility design. Due to EDD's required presence throughout the state, buildings could require complete retrofit or new construction to provide facilities capable of withstanding extreme heat events.
Changes in Precipitation	
- EDD's operations could be impeded by localized flooding, leaking roofs, or compromised drainage systems. - Periods of extreme drought could indirectly impact EDD facilities with higher water costs or landscape watering restrictions similar to the 2013-2016 drought. - The most severe precipitation events could result in landslide, mudslide, or erosion. Such events could disrupt employee and customer services for extended periods of time.	- EDD will continue to pursue sustainability initiatives to reduce water use and mitigate negative effects from changes in precipitation. - Incremental mitigation efforts will likely be effective toward preventing the future effects. If facilities are poorly maintained by lessors or property management, EDD will ensure lease compliance or relocate from problematic facilities.
Sea Level Rise	
- Impact to existing EDD facilities due to sea level rise appears to be minimal through the end of the century. As seen in Table 4, the only anticipated impact is to a leased property in Oakland, according to the most aggressive sea level rise model.	- EDD will continue to monitor its facilities for potential impact of sea level rise as modeling evolves with additional data. No action is needed at this time for the Oakland location; if conditions worsen, EDD has the ability to relocate from this facility and conduct operations in a less vulnerable location while remaining within the same general service area.

Climate Change in Department Plans and Programs

Plans that have incorporated climate	How incorporated
2018 Sustainability Roadmap	--

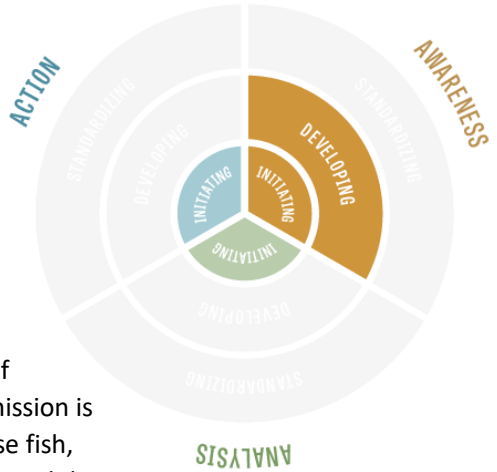
Programs that have incorporated climate	Plans or Programs that have yet to incorporate climate change
N/A or unreported	*N/A or unreported*

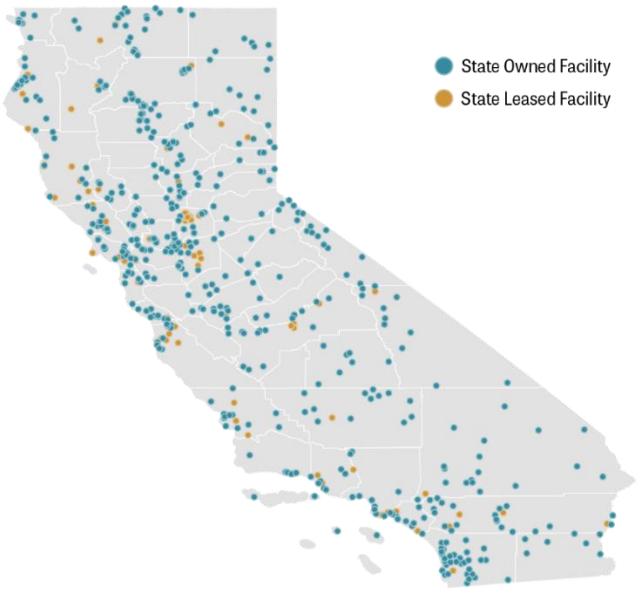
Process Characteristics

Coordination and Collaboration
The California Employment Development Department (EDD) identified relevant legislation and state resources through the Sustainability Roadmap and was a sector lead for Safeguarding California, the State's Climate Adaptation Strategy. EDD is working in conjunction with the Department of General Services Real Estate Division to advocate for best practices to improve policies and procedures which include consideration of climate change.
Organizational Capacity
EDD's Administration Branch will work to educate the Department's staff on evolving considerations in facility planning, and the role they play in adapting to a changing climate. The Lease Management and Sustainability Unit serves as the Department's climate champion, constantly pursuing new opportunities to incorporate consideration of climate change and conservation into everyday business operations.
Equity and Community Resilience
A significant portion of EDD's business is to support vulnerable populations through UI, DI, and WS programs. The need for EDD services may increase due to the impact of climate change on various industries, such as agriculture and transportation, as well as increased need for DI where populations experience negative health effects due to climate change. In response, EDD may need to increase its presence throughout the state and consider each facilities' impact on the community during the project planning phase. A core principle of EDD's business is providing services in communities where there is a need, and EDD will continue to support DACs similar to its role in supporting vulnerable populations. EDD's participation in local assistance centers also aids DACs during times of increased need.
Metrics/Using Best Available Science
EDD used Cal-Adapt data to conduct the mini vulnerability assessment of department facilities and will continuously evaluate its recovery facilities as part of its Continuity of Operations Plan.
Integrated Approach
The department has completed a Sustainability Roadmap, which includes both mitigation and adaptation chapters. It is unclear the level of analysis of or support for adaptation strategies that include mitigation co-benefits, or whether this will be a strategy in the future.
Natural Infrastructure
EDD does not conduct projects involving natural infrastructure or undertake new construction that could incorporate natural infrastructure. EDD's focus is on maintenance of existing owned facilities and management of leased space. In the event that EDD undertakes a project that incorporates natural infrastructure, EDD will consult with DGS to ensure that opportunities to reduce the impact of climate change are included as a part of the project planning process. EDD will look for opportunities to increase landscaping and reduce hardscape at EDD facilities. This could include planting drought tolerant and resilient vegetation, shade trees to improve conditions for buildings and occupants, and design that encourages rainwater infiltration instead of storm water runoff. However, EDD occupies relatively small facilities, often in urban areas, which limits the ability to implement large scale infrastructure projects. EDD is working with the DGS to renovate the landscape with climate-appropriate landscaping at the EDD-owned facilities in Sacramento and Oakland, which account for approximately 80% of EDD's landscape area. As part of these projects, EDD will also evaluate landscape and irrigation practices statewide in order to reduce water use. This will have the combined benefit of reduced water use and enhanced aesthetics for the surrounding community.

To see this department's full Sustainability Roadmap and for more information on how this department has addressed topics such as urban heat island, natural infrastructure, and life-cycle cost accounting, please visit the full document at https://green.ca.gov/home/roadmaps.

California Department of Fish and Wildlife





Department Overview

The California Department of Fish and Wildlife's (CDFW) mission is to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. The department served as a contributor to the Safeguarding California Climate Adaptation Strategy and is working to incorporate climate science and climate adaptation strategies into programs and resource management activities.

Existing Facilities[†]	
Owned	504
Leased	265
Gross area (square feet)	19932287

Phase Evaluation

Awareness
CDFW is primarily in the awareness stage of adaptation planning and implementation. The department is categorized at maturity level 2 (developing) due to their high level of activity in coordination, collaboration and integration of climate adaptation discussions in their vision plan, "Unity, Integration, and Action: DFG's Vision for Confronting Climate Change in California[8]" released in 2011.
Analysis
CDFW is considered to be initiating in the analysis phase because they have completed an in-depth assessment but have yet to create a comprehensive strategy based on this assessment titled "Projected Effects of Climate Change in California: Ecoregional Summaries Emphasizing Consequences for Wildlife." In addition to these ecoregional summaries, CDFW has several completed or on-going analyses to assess the vulnerability of several different taxa including birds, mammals, reptiles and amphibians, rare plants, and fish. The department has noted that this research will directly inform the revision of the CDFW Action Plan and influence department-wide management and research efforts.
Action
While CDFW's activity lies mostly in the awareness phase, the department is implementing some ad hoc strategies to respond to the impacts of climate change. Examples include employing rain capture systems to use as drinking water for wildlife and using natural infrastructure to assist with sea level rise.

[†] "Existing facilities" may include but are not limited to any of the following facility types: office buildings, parking spaces, storage facilities (refrigerated and nonrefrigerated), warehouses, electric vehicle charging stations, air monitoring stations, airports, marinas, greenhouses, forest management sites, field offices, laboratories, communication towers, etc.

[8] The Department name for the Department of Fish and Game was changed to Department of Fish and Wildlife in 2012.

Impacts and Strategy Summaries

Impacts	Strategies
Changing Temperature and Extreme Heat	
- Hotter days require more water for wildlife and wetlands - Increased energy usage as more water is pumped - Higher heat requires shade for wildlife - Hotter days will have health and productivity impacts on employees - Higher heat days may affect the electrical grid, which could produce black or brown outs thus causing power loss at fish hatcheries. - Higher heat days will require more energy to pump extra water and/or chill the water for the fish to stay healthy	- Implementing shade structures and/or alternative technologies to help shade or cool wildlife - Purchasing of new or larger units to keep up with energy demand for air conditioning on remote staff sites and for fish hatcheries maintenance - Assessing all sites for the possibility of onsite renewable energy generation and energy storage - Conducting energy audits and where feasible, energy efficiency upgrades. - Incorporating adaptation measures into planning of future facilities and landscapes such as: planting more trees where possible, not paving or paving with permeable pavements, and ensuring buildings are well insulated and shaded - Relocating staff from leased sites if possible
Changes in Precipitation	
- Affected facilities include wildlife areas, fish hatcheries, and fishing access locations - Flood risk hazards on trails or in remote areas for field scientists - Destruction of structures and equipment as well as inaccessibility to areas - Flooding in areas near the ocean and bays creates potential for increased saltwater contamination to fresh water supplies - If wildlife do not have access to proper water, they could die or leave the area.	- Creating rain capture systems. - Locating facilities on higher ground to protect them from flooding, especially where expensive equipment is stored in lower areas. - Relocating sites that are leases, if they are able to be relocated will be (due to wildlife needs, most sites are unable to be relocated)
Sea Level Rise	
- Sea level rise has the potential to cause flooding that would require relocation of sites or the use of other adaptation actions	- Relocating if possible - Locating buildings and other sensitive equipment on higher ground, and buildup of natural and manmade infrastructure to accommodate the projected rise

Climate Change in Department Plans and Programs

Plans that have incorporated climate	How incorporated
State Wildlife Plan	Climate change was addressed in the selection of conservation targets and in the development of associated conservation strategies.
Land Management Plans	Several LMPs have already included climate change to some degree. As LMPs are updated, or as new ones are created, climate change is being addressed. The ecoregional summaries will assist with this effort.
2018 Sustainability Roadmap	--

Programs that have incorporated climate	Plans or Programs that have yet to incorporate climate change
Fisheries Restoration Grant Program Proposition 1 Restoration Grant Program Wetland Restoration for GHG Reduction Grant Program State Wildlife Grant Program Land Acquisition Evaluation practices Utility Programs	*N/A or unreported*

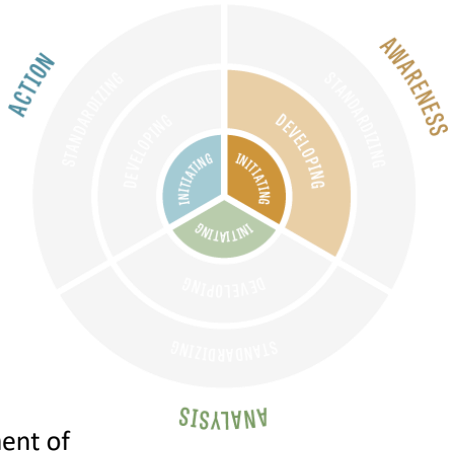
Process Characteristics

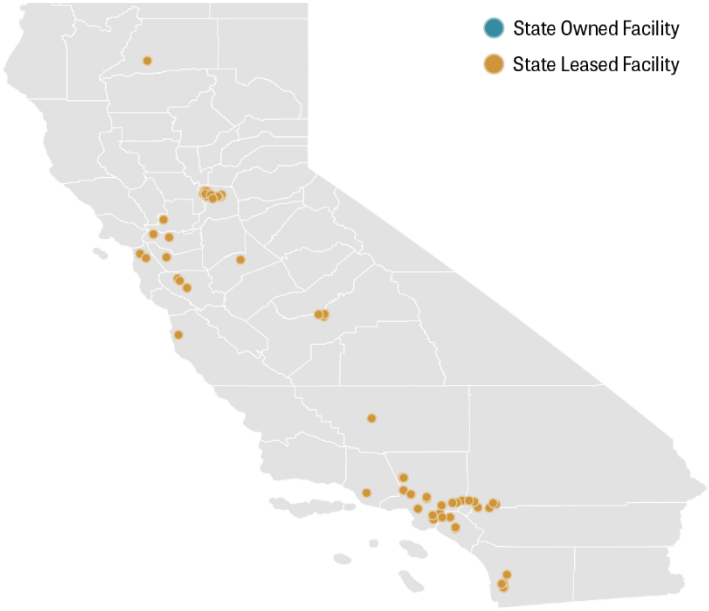
Coordination and Collaboration
The California Department of Fish and Wildlife (CDFW) identified relevant legislation and state resources through the Sustainability Roadmap was a sector lead for Safeguarding California, the State's Climate Adaptation Strategy. CDFW is also engaged in several national, regional and local efforts focused on supporting the dissemination of climate change research. For example, CDFW participates on the steering committees of four Landscape Conservation Cooperatives (LCCs) in California, serves on the Steering Committee for the National Fish, Wildlife, and Plants Climate Adaptation Strategy, is Co-Chair of the Association of Fish and Wildlife Agencies Climate Committee, Chair of the Western Association of Fish and Wildlife Agencies Climate Change Committee, participant in the Western Governors' Association, and member of the CA Climate Action Team. In addition to this coordination, the department had organized a climate change stakeholder group who actively worked with CDFW to craft a collective vision for climate change adaptation actions for fish, wildlife, and habitats in the state[9]. The composition of participants in CDFW's climate change stakeholder group included nongovernmental organizations, state and federal agencies, academic community, private industry, and local land trusts. It is unclear the current activity of this group.
Organizational Capacity
The Department has a unit dedicated to climate change and incorporating climate science and adaptation strategies into all areas of wildlife planning and management.
Equity and Community Resilience
In their 2018 Sustainability Roadmap, CDFW discusses the resources provided to vulnerable communities by their department such as green spaces, natural areas, and access to education about wildlife. The department speaks generally about the potential impacts to these communities and identifies facilities located in disadvantaged communities through the Sustainability Roadmap using CalEnviroScreen 3.0.
Metrics/Using Best Available Science
CDFW's "Projected Effects of Climate Change in California: Ecoregional Summaries Emphasizing Consequences for Wildlife 2011" includes assessments for temperature, precipitation, snowpack, streamflow, fire, vegetation change, threats to wildlife, streamflow and water availability, twentieth-century streamflow patterns, and more. In addition to this assessment, the department is beginning to incorporate lifecycle cost accounting into its facility and fleet planning. The department is currently evaluating different tools and technologies to assist with this effort.
Integrated Approach
The department has completed a Sustainability Roadmap, which includes both mitigation and adaptation chapters. It is unclear the level of analysis of or support for adaptation strategies that include mitigation co-benefits, or whether this will be a strategy in the future.
Natural Infrastructure
Given the mission of CDFW, much of the work done within the department is habitat and wetlands restoration and management. Much of the actions undertaken to fulfill the department's mission uses natural and green infrastructure processes.

To see this department's full Sustainability Roadmap and for more information on how this department has addressed topics such as urban heat island, natural infrastructure, and life-cycle cost accounting, please visit the full document at https://green.ca.gov/home/roadmaps

[9] Unity, Integration, and Action: DFG's Vision for Confronting Climate Change in California. California Department of Fish and Game. September 2011.

California Department of Consumer Affairs





Existing Facilities[†]	
Owned	*1*
Leased	*154*
Total Square Feet	*1,119,911*

Department Overview

The California Department of Consumer Affairs (DCA) issues licenses, certificates, registrations and permits in over 250 business and professional categories through 39 regulatory entities comprised of boards, bureaus, committees, a program and a commission. These 39 entities set and enforce minimum qualifications for the professions and vocations they regulate, which include nearly all of California's healthcare fields. The Department's mission is to protect California consumers by providing a safe and fair marketplace through oversight, enforcement, and licensure of professions. The department leases many of its facilities and has committed to reassessing these facility locations and working with lessors to integrate climate change into facilities management.

Phase Evaluation

Awareness
The California Department Consumer Affairs (DCA) is primarily in the awareness stage of adaptation planning and implementation. The department is categorized at maturity level 1 (initiating) as this is the department's first time assessing all facilities. While the department has yet to complete an in-depth vulnerability assessment, the department has stated that they will work with the Department of General Services and other lessors to incorporate adaptive materials and landscaping into their facilities to respond to the impacts of climate change.
Analysis
DCA is categorized at maturity level 1 (initiating) in the analysis phase. The department does not yet have a plan that includes strategies that reference an in-depth vulnerability assessment, and has not conducted analysis of potential options for co-benefits, fiscal resources, or other criteria.
Action
DCA is categorized at maturity level 1 (initiating) in the action phase because the department has yet to adopt a comprehensive plan that includes strategies that respond to an in-depth vulnerability assessment.

[†] "Existing facilities" may include but are not limited to any of the following facility types: office buildings, parking spaces, storage facilities (refrigerated and nonrefrigerated), warehouses, electric vehicle charging stations, air monitoring stations, airports, marinas, greenhouses, forest management sites, field offices, laboratories, communication towers, etc.

Impacts and Strategy Summaries

Impacts	Strategies
Changing Temperature and Extreme Heat	
- Rising temperature affects facilities, as it will take more energy to keep them cool for occupant comfort and health. - Higher overnight lows and daytime highs will increase energy use and wear and tear on HVAC equipment over time. - Extreme heat days make it increasingly difficult to keep server rooms at the optimal temperature so servers do not overheat and shut down. Furthermore, extreme heat days may exceed the cooling capacity of the installed equipment on specific days.	- DCA has been on a 5-year consolidation effort to reduce server room equipment load. DCA has reduced the amount of servers from at a peak of about 60 racks of servers to about 20 racks. DCA will continue this trend by migrating equipment to a hyper-converged infrastructure, and utilizing all Flash-Based disk arrays, that will reduce the footprint even further in not only the number of racks, but also the equipment, cooling and electrical needs. - DCA will request in their lease negotiations for tenant improvements to include upgraded HVAC systems that are more efficient, shade trees to be planted, upgraded LED lighting and Mecho window shades or equivalent be installed on the windows. Effective immediately, as each lease expires, DCA is requesting these improvements to be made as part of the lease agreement. DCA hopes to have these improvements in place for 105 DCA locations by 2028.
Changes in Precipitation	
- The DCA-HQ-1 building, which houses the majority of DCA's servers, is projected to have a 25.7% increase in precipitation by the end of the century. This could cause a worst-case scenario of flooding, as the building is located close to the Sacramento River and American River. - Facilities could develop cracks and leaks, which could lead to water intrusion and then mold from increased precipitation. - Damaging the servers would interrupt critical work for the majority of DCA's employees. - DCA could not serve its clients and in person customers in a timely manner. - Could affect the health and safety of DCA's employees.	- DCA will work with the lessors to find out the last time the roofs were replaced and provide information on Power Purchase Agreements if it is time to replace the roofs. - DCA will continue to work with the lessor to maintain the structural integrity of the DCA-HQ-1 building.
Sea Level Rise	
- *No specific impacts identified.*	- The action DCA will take to minimize risk of rising sea levels is to relocate offices. -As leases expire, DCA will evaluate if it is cost effective and necessary given the size, age of buildings etc., to move with the goal of meeting current CalGreen building codes. The population and need of the region for the licensees will also play a role in future lease decisions.

Climate Change in Department Plans and Programs

Plans that have incorporated climate	How incorporated
Facilities Management Unit (FMU) Procedures	As DCA negotiates new and/ or renewal leases, Facilities staff is incorporating Climate Change Adaptation by requesting infrastructure upgrades to build climate preparedness and reduce GHG emissions.
2018 Sustainability Roadmap	--

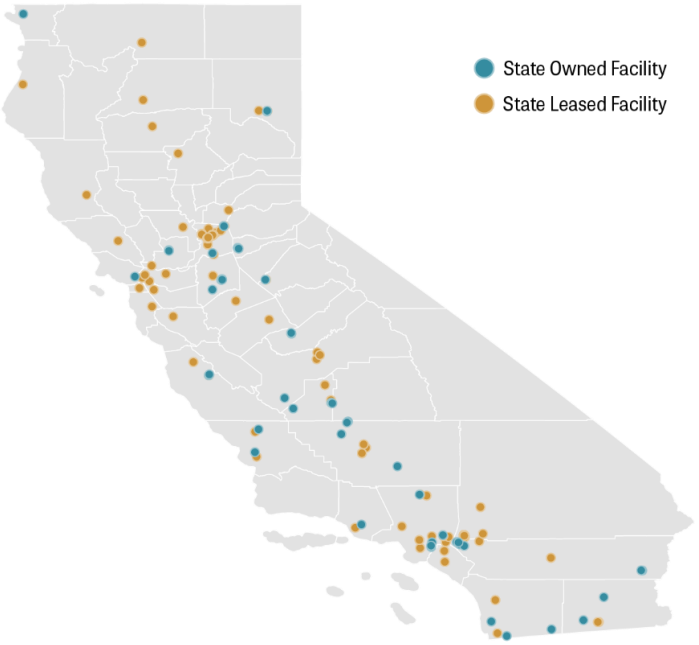
Programs that have incorporated climate	Plans or Programs that have yet to incorporate climate change
N/A or unreported	*N/A or unreported*

Process Characteristics

The California Department Consumer Affairs (DCA) identified relevant legislation and state resources through the Sustainability Roadmap.
Organizational Capacity
It is unclear the full extent of DCA's organizational capacity due to the level of detail provided in the Sustainability Roadmap Adaptation Chapter.
Equity and Community Resilience
Some of DCA's licensees and prospective applicants are considered to be part of the vulnerable populations. The facilities help to support the community by offering exams for required employment licenses for individuals to start their careers. Additionally, the employees working at these facilities are supporting the community by providing business to the local stores and restaurants.
Metrics/Using Best Available Science
The data used to inform the SR Adaptation Chapter is from Cal-Adapt, CalEnviroScreen 3.0, and the Urban Heat Island Index tool. It is unclear the department's intention of any further analysis of facilities or other plans and investments. It is also unclear the department's intention of creating and utilizing metrics to track progress.
Integrated Approach
The department has completed a Sustainability Roadmap, which includes both mitigation and adaptation chapters. It is unclear the level of analysis of or support for adaptation strategies that include mitigation co-benefits, or whether this will be a strategy in the future.
Natural Infrastructure
DCA owns only one building and leases their remaining facilities. DCA's one owned building is comprised of 30,000 square feet and is located in Sacramento. DCA will work to plant more drought tolerant plants and trees and harvest rainwater at its owned facility and work with lessors to have them plant more shade trees, harvest rainwater, and plant rooftop gardens at leased facilities. DCA is considering and prioritizing natural infrastructure in all new lease negotiations and current lease renegotiations by asking for tenant improvements to include, but not limited to, rainwater harvesting, rooftop gardens, planter boxes, planter walls, roadside trees and permeable pavement.

To see this department's full Sustainability Roadmap and for more information on how this department has addressed topics such as urban heat island, natural infrastructure, and life-cycle cost accounting, please visit the full document at https://green.ca.gov/home/roadmaps.

California Department of Corrections and Rehabilitation



Existing Facilities[†]	
Owned	*51*
Leased	*186*
Total Square Feet	55,180,734

Department Overview

The California Department of Corrections and Rehabilitation (CDCR) operates all State adult prisons and juvenile facilities, oversees a variety of community correctional facilities, and supervises all adult and juvenile offenders, including adults released to parole supervision. CDCR maintains infrastructure for 34 state-owned adult institutions, 3 juvenile facilities, 6 facilities in "warm shutdown" (minimal operations/no inmates) and a training academy housing cadets. The department has already incorporated climate action planning into its required Annual Master Plan and Five-year Infrastructure plans for the last several years. CDCR has also begun the preparation of a Climate Action Plan in 2016 that, when completed, will provide guidance in project-level impacts related to climate change for CDCR's facility portfolio, and identify potential climate adaptation strategies that could be implemented to address these increased risks and improve the resilience of CDCR facilities and operations.

Phase Evaluation

Awareness
The California Department of Corrections and Rehabilitation (CDCR) is categorized between a maturity level 2 (developing) and 3 (standardizing) as the department is currently developing a Climate Action Plan that includes an assessment of climate impacts on all facilities.
Analysis
CDCR is categorized at maturity level 2 (developing) in the analysis phase because the department is currently developing a plan that will include strategies that reference an in-depth vulnerability assessment. To advance in this category, the department should begin strategy assessment and selection using clearly defined evaluation metrics across multiple criteria, such as feasibility and co-benefits.
Action
CDCR is considered to be a maturity level 1 (initiating) in the action phase as the department is not yet implementing any planned strategies to respond to the impacts of climate change. However, the department is taking ad hoc actions to respond to current conditions such as heat and flooding.

[†] "Existing facilities" may include but are not limited to any of the following facility types: office buildings, parking spaces, storage facilities (refrigerated and nonrefrigerated), warehouses, electric vehicle charging stations, air monitoring stations, airports, marinas, greenhouses, forest management sites, field offices, laboratories, communication towers, etc.

Impacts and Strategy Summaries

Impacts	Strategies
Changing Temperature and Extreme Heat	
- Approximately half of the CDCR adult correctional facilities are located in areas of the State that have moderate to high summer temperatures. - It will also accelerate deterioration of building Systems, especially mechanical systems, if repairs/renovation projects are delayed or deferred. - Increased temperatures will add to both water and electricity demands.	- A project to replace all of the evaporative cooling with a centralized chiller is expected to proceed to construction in 2018 and will serve the cooling needs of both Ironwood State Prison (ISP) and Chuckawalla Valley State Prison (CVSP), both of which are listed as top affected facilities. - CDCR is introducing improved cooling systems in its healthcare space and a myriad of housing units serving the CDCR offender population with medical and/or mental health treatment needs. - During the drought years of 2013-2017, CDCR took steps to reduce its water use through both operational (conservation) practices and installation of water efficiency measures, exceeding the 25 percent statewide conservation goal set by the Administration. - CDCR established a Demand Response Program in concert with investor owned utilities in 2008 that created a framework through which CDCR can reduce its consumption needs to allow other utility customers to stay connected; the periods of time when this program is of greatest need is during the peak summer months. - CDCR also has a Cool Roof program designed to minimize onsite heat buildup, has installed solar parking canopies and cool (reflective) pavements to help to reduce the heat island effect in CDCR parking facilities, and has installed misting systems at several healthcare facilities to help mitigate temperature issues during outside recreation hours.
Changes in Precipitation	
- Several facilities have already been inundated with severe rains and accompanying winds that caused roofs to fail and water intrusion in parking and drive areas, making navigation to and around the prison difficult. - High precipitation levels will continue to exacerbate operations until repairs can be made. - Large transportation routes inundated with water have the potential to shut off access for extended periods of time, posing safety hazards to staff and the public trying to access the institutions or worse, transporting ill persons to needed hospitals.	- CDCR will need to potentially improve drainage systems in and near each facility to prevent storm water runoff and intrusion and prevent erosion. - It will be essential that CDCR work with its local partners to ensure that they are aware of and investing as necessary in climate preparation strategies to mitigate excess precipitation. - CDCR developed a statewide Drought Action Plan and required each institution to develop a site specific plan as well. Each institution selected a Water Conservation Manager (WCM) to lead Drought Task Force Teams. - CDCR has implemented bio swales and permeable paving at some of its sites to respond to and prepare for flooding impacts.
Sea Level Rise	
- According to Cal-Adapt data there are no CDCR correctional facilities that are at risk from rising sea levels; however, CDCR has identified two of its three correctional facilities situated near coastal zones, Deuel Vocational Institution (DVI) and San Quentin, which it believes could	- San Quentin is situated on a low bluff on the shoreline of San Francisco Bay and has experienced erosion of its protective seawall over the years. An improvement project fortifying its walls was completed several years ago to fortify this structure. - While these prisons are not currently considered at risk of sea rise, CDCR remains cognizant of the potential for seawater rise

be impacted by sea level rise and potential flooding along the coastline and delta. - Changes in sea level could result in inundation of some support areas outside of the main prison grounds and the influence of storm waves could require further remediation of the existing perimeter seawall. Sea-level rise could also disrupt major transportation routes, such as State Route 580 and U.S. Highway 101, which are main thoroughfares for inmate transport, visitor trips, employee commutes, and vendor deliveries.	influences and will continue to evaluate the risks associated with these locations.

Climate Change in Department Plans and Programs

Plans that have incorporated climate	How incorporated
Annual Master Plan	*Unreported*
Five Year Infrastructure Plan	*Unreported*
2018 Sustainability Roadmap	--

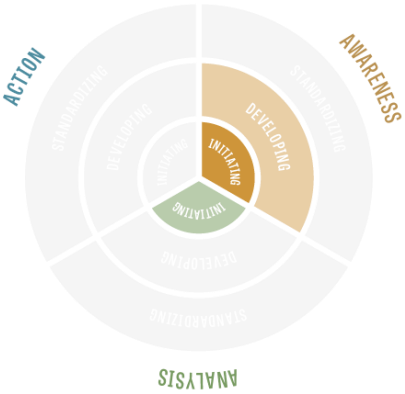
Programs that have incorporated climate	Plans or Programs that have yet to incorporate climate change
N/A or unreported	Climate Action Plan

Process Characteristics

Coordination and Collaboration
The California Department of Corrections and Rehabilitation identified relevant legislation and state resources through the Sustainability Roadmap. The department is also preparing a Climate Action Plan that will be developed utilizing state documents and tools such as Cal-Adapt, the Safeguarding California Plan and associated Implementation Action Plans, California Environmental Protection Agency Preparing California for Extreme Heat Guidelines and Recommendations, and the California Coastal Commission Sea Level Rise Policy Guidance.
Organizational Capacity
In 2008, CDCR created a unit within the Division of Facility Planning, Construction and Management dedicated to sustainability. While the department has a dedicated Sustainability unit, it is unclear the level of capacity that is used for climate adaptation planning. In the Sustainability Roadmap, the department identified a lack of funding for deferred maintenance as a problem for potential adaptation strategies.
Equity and Community Resilience
CDCR manages a significant number of offenders that have either mental or medical health issues or learning disabilities. The unique needs and circumstances of this population are addressed as part of the standard offering of services, including provision of food, housing and even education, or as part of their case management plan for those with mental and medical health needs. Once released and/or paroled, these same individuals may once again may be subject to risks other vulnerable population's experience. However, CDCR tries to combat this cycle of vulnerability by emphasizing rehabilitation and employment-building skills during incarceration. These efforts are intended to reduce recidivism and are intended to provide the means to live in a self-sustaining manner after they have served their sentence. Many of CDCR's facilities are also located in remote and/or rural areas that suffer from a lack of investment by large corporations more traditionally located in urban settings, and a corresponding impact on property values. CDCR is often the largest employer within the region. To ensure local residents are afforded the opportunity to obtain employment with CDCR, its last three major construction projects included contract language that required the construction firm to prioritize local hiring to construct the projects.
Metrics/Using Best Available Science
CDCR's Climate Action Plan will be developed utilizing state documents and tools such as Cal-Adapt, the Safeguarding California Plan and associated Implementation Action Plans, California Environmental Protection Agency Preparing California for Extreme Heat Guidelines and Recommendations, and the California Coastal Commission Sea Level Rise Policy Guidance.
Integrated Approach
The department has completed a Sustainability Roadmap, which includes both mitigation and adaptation chapters. It is unclear the level of analysis of or support for adaptation strategies that include mitigation co-benefits, or whether this will be a strategy in the future.
Natural Infrastructure
CDCR has implemented a number of natural infrastructure solutions to mitigate the impacts of their projects. Some projects have funded and planned wetlands restoration or preservation projects such as the installation of bioswales at the Stockton healthcare facility or, more recently, wetlands avoidance and restoration at a construction site completed in 2016. The recent drought and the state moratorium against new landscaping had placed a hold on pursuing landscaping solutions to aid in climate resiliency. With the drought being lifted in most CDCR locations, CDCR is going to be evaluating some of these solutions in its planning efforts. For example, planting additional trees to mitigate heat island impacts is a clear opportunity for new projects. Reducing the heat island effect within a prison yard is also under way as the Department has completed several gardens inside prison walls with more planned.

To see this department's full Sustainability Roadmap and for more information on how this department has addressed topics such as urban heat island, natural infrastructure, and life-cycle cost accounting, please visit the full document at https://green.ca.gov/home/roadmaps.

California Department of Parks and Recreation



Department Overview

The mission of the California Department of Parks and Recreation (CDPR) is to provide for the health, inspiration, and education of the people of California by helping to preserve the State's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation. The California Department of Parks and Recreation (CDPR) serves over 67 million visitors annually, including day use, camping and boating recreation. Along with completing a Sustainability Roadmap Adaptation Chapter, the department is a sector lead for Safeguarding California, and played an advisory role for a report on natural infrastructure solutions in California as part of the Fourth Climate Change Assessment.

Existing Facilities[†]	
Owned	*285*
Leased	*53*
Total Square Feet	865,549,036

Phase Evaluation

Awareness
The evaluation of the California Department of Parks and Recreation Sustainability Roadmap Adaptation Chapter shows that much of the Department's work currently takes place in the awareness phase of the evaluation framework. The department is considered to be between a maturity level 1 (initiating) and 2 (developing) in the awareness phase. While the department has not yet began an in-depth vulnerability assessment of all assets, plans, and programs from which to base adaptation strategies, CDPR has begun discussion of climate impacts across some specific plans and general plans.
Analysis
The Department of Parks and Recreation is categorized at maturity level 1 (initiating) in the analysis phase, as this is the department's first time looking at certain climate impacts to facilities given the information provided in the department's adaptation chapter. However, the department should be recognized for conducting a more in-depth analysis of sea level rise impacts completed in coordination with the State Coastal Conservancy.
Action

[†] "Existing facilities" may include but are not limited to any of the following facility types: office buildings, parking spaces, storage facilities (refrigerated and nonrefrigerated), warehouses, electric vehicle charging stations, air monitoring stations, airports, marinas, greenhouses, forest management sites, field offices, laboratories, communication towers, etc.

From the information provided in the Sustainability Roadmap Adaptation Chapter, the CDPR is not yet in the action phase. The department is identifying some strategies to respond to climate impacts but is not yet implementing any strategies. However, the department has incorporated climate change adaptation as priority selection criterion for allocation of capital outlay and deferred maintenance infrastructure investment funds, which should have impacts on selected ad hoc or undocumented strategies.

Impacts and Strategy Summaries

Impacts	Strategies
Changing Temperature and Extreme Heat	
- Increased chance of extreme wildfires	- The Department will continue to update and monitor the Safeguarding California Plan to identify how climate change will affect California State Park's infrastructure and industry to identify what actions the state can take to reduce the risks posed by climate change. - Creating shade for buildings and parking lots by increasing the number of trees, installing parking canopies where possible - Continuing to perform energy audits on park units to ensure energy efficiency and utilizing cool pavements - Incorporate climate change impacts into the Infrastructure Design Plan
Changes in Precipitation	
- Increased probability of flooding, mudslides, increased storm surge, landslides, erosion, snowmelt, and infrastructure loss. - Adversely affect park visitation, cause habitat loss and affect natural and cultural areas.	- Installing pervious paving solutions in several Southern California beach parking areas - Low impact development (the development of permeable, vegetated strips at the edge of parking areas to provide water absorption and pollutant reduction) and storm water detention basins - Develop "paving best practices" to consider employing whenever possible throughout the course of paved area maintenance - To the extent possible with providing service to visitors and protecting natural and cultural resources, facilities at risk of flooding are considered for relocation to higher elevations - Areas known to be at temporarily heightened risk of flooding (such as immediately after a large wildland fire in upland areas) will be evaluated for the need for armoring and temporary or permanent design of bypass structures to reduce flood effects.
Sea Level Rise	
- Many park units are projected to be exposed to sea level rise (SLR) and about 100 units already overlap the mean higher high water line (0 ft in the NOAA SLR viewer) - State Parks owns 340 miles of the coastline in California. Along these coastal properties, the department must consider public service, adjacent landowners, and long term models discussing potential coastal inundation.	- Responses to coastal erosion or inundation threats include managing natural environments to reduce effects, retreating and removing facilities from threatened areas, and armoring where appropriate.

Climate Change in Department Plans and Programs

Plans that have incorporated climate	How incorporated
Cuyamaca Rancho SP (2015)	Climate Change sections describe potential impacts to the park unit as well as goals and guidelines for addressing these impacts.
Big Basin SP (2013)	Several paragraphs describe potential climate-related impacts to the park, including sea level rise, habitat loss and shifts, fire danger, storms and flooding, and changes in recreational use.
San Luis Reservoir SRA (2013)	Climate change sections describe potential impacts, focusing on reservoir levels and recreation, including some evaluation of the effect on plan alternatives.
Topanga SP (2012)	Climate change is mentioned in several sections.
Sustainability Roadmap 2018-2019	--

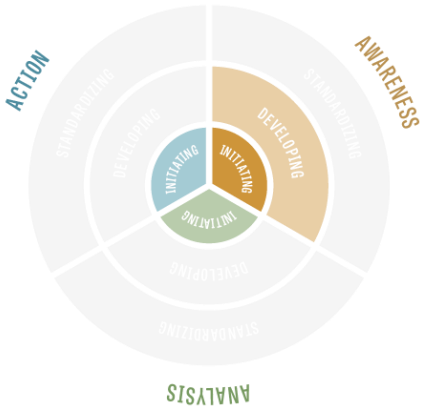
Programs that have incorporated climate	Plans or Programs that have yet to incorporate climate change
Five-Year Infrastructure Plan Energy Service Contractors Landscaping Plan Water Grant	*N/A or unreported*

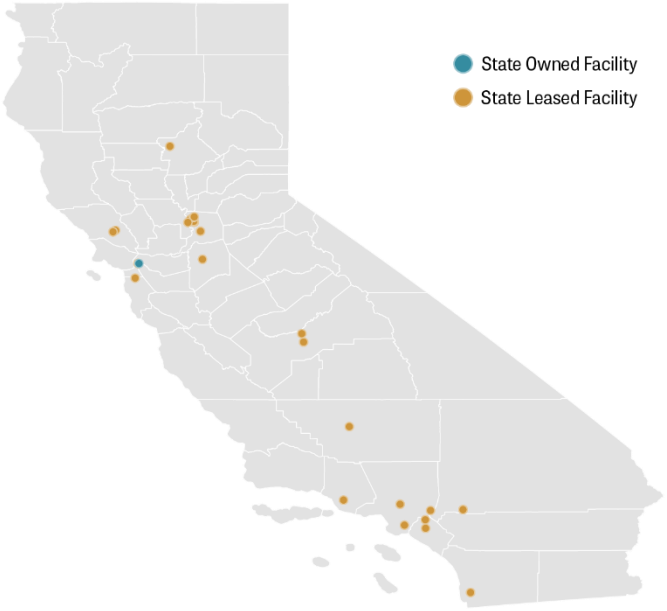
Process Characteristics

Coordination and Collaboration
The California Department of Parks and Recreation (CDPR) identified relevant legislation and state resources through the Sustainability Roadmap and was a sector lead for Safeguarding California, the State's Climate Adaptation Strategy. Beyond this, it is unclear the level of coordination at the State and local levels on climate planning that is taking place.
Organizational Capacity
It is unclear the full extent of CDPR's organizational capacity due to the level of detail provided in the Sustainability Roadmap Adaptation Chapter.
Equity and Community Resilience
California State Parks has several parks that are located in major cities and serve vulnerable populations. For instance, Los Angeles State Historic Park (LASHP) is located in a low-income neighborhood of Los Angeles, which has a large minority population that previously lacked access to a recreational facility within walking distance. Parks serve as a location to display significant cultural resources, provide job opportunities, opportunities for the public to engage in outdoor recreation and physical activities, safeguard open space and provide tree canopy cover, as well as provide access to educational opportunities. Alongside providing these benefits, the department is currently working with the California Public Utility Commission on a proposed project which would increase access to affordable energy to disadvantaged communities in the San Joaquin Valley. In addition, DPR is working on a strategy to ensure that the department serves all communities within California as equitably as possible. This includes the Office of Grants and Local Services assisting local agencies with funding for development of urban parks and a renewed emphasis on DPR acquisition and development of urban park units such as Baldwin Hills Scenic Overlook and Los Angeles State Historic Park.
Metrics/Using Best Available Science
Because so many park units are in the current and projected inundation zones affected by sea level rise, the department reported a higher-resolution analysis of potential SLR impacts in these units. The Department, in collaboration with the State Coastal Conservancy, produced a comprehensive assessment of whether its buildings and other infrastructure (parking lots, campgrounds, roads) will be inundated under 2 ft. and 5 ft. sea level rise projections. These ranges were selected to align with the OPC guidance and with the available map layers. Projections and map layers came from The Nature Conservancy (http://coastalresilience.org/), CoSMoS (https://walrus.wr.usgs.gov /coastal processes/cosmos/), and NOAA (https://coast.noaa.gov/digitalcoast/tools/slr).
Integrated Approach
The department has completed a Sustainability Roadmap, which includes both mitigation and adaptation chapters. It is unclear the level of analysis of or support for adaptation strategies that include mitigation co-benefits, or whether this will be a strategy in the future.
Natural Infrastructure
The Department has stated that they are equipped to pilot and implement natural infrastructure solutions as they are developed and defined statewide (e.g., through the Technical Advisory Group coordinated by the Office of Planning and Research). Also, as part of the State's Fourth Climate Assessment, the Department has played an advisory role for a project to develop natural infrastructure solutions in coastal areas.

To see this department's full Sustainability Roadmap and for more information on how this department has addressed topics such as urban heat island, natural infrastructure, and life-cycle cost accounting, please visit the full document at https://green.ca.gov/home/roadmaps.

California Department of Public Health





Department Overview

The mission of the California Department of Public Health (CDPH) is to optimize the health and well-being of the people of California. CDPH's mission along with recognizing climate adaptation and sustainability practices are incorporated into the Department's infrastructure plans. While the department is categorized in the first maturity level (initiating) of the evaluation framework process, the department owns relatively few facilities and is a lead contributor to the Safeguarding California Climate Adaptation Strategy.

Existing Facilities[†]	
Owned	1
Leased	60
Total Square Feet	1,089,628

Phase Evaluation

Awareness
The California Department of Public Health (CDPH) is primarily in the awareness stage of adaptation planning and implementation. From the evaluation of the department's Sustainability Roadmap Adaptation Chapter, the department is considered to be between a maturity level 1 (initiating) and 2 (developing) in the awareness phase. While this is the department's first time analyzing climate impacts to state facilities and operations, the Sustainability Roadmap provides an analysis of all relevant climate impacts. The department also stated that it would coordinate with the Department of General Services to incorporate climate planning into its leased facilities.
Analysis
CDPH is categorized at maturity level 1 (initiating) in the analysis phase. The department does not yet have a plan that includes strategies that reference an in-depth vulnerability assessment, and has not conducted analysis of potential options for co-benefits, fiscal resources, or other criteria.
Action
CDPH is categorized at maturity level 1 (initiating) in the action phase because the department has yet to begin implementing planned strategies that respond to an in-depth vulnerability assessment. However, the department is taking steps to implement ad hoc actions such as installing solar canopies over parking lots and installing drought tolerant landscapes.

[†] "Existing facilities" may include but are not limited to any of the following facility types: office buildings, parking spaces, storage facilities (refrigerated and nonrefrigerated), warehouses, electric vehicle charging stations, air monitoring stations, airports, marinas, greenhouses, forest management sites, field offices, laboratories, communication towers, etc.

Impacts and Strategy Summaries

Impacts	Strategies
Changing Temperature and Extreme Heat	
- The increase in extreme heat will increase electrical and water usage. The increase in electrical usage will be because of an increased operating hours of mechanical chillers and water pumps. There will be an increase in water usage because of increased evaporation with use of cooling towers for the chilled water system.	- The Richmond campus: • Installed 9500 solar panels through the campus parking lot, which provides shade for parking and pavements. • Has backup generators that are used during power outages. • Informed staff to dress comfortably to work and close the window blinds to keep the building cool. • Is currently installing cool roofs throughout the campus to decrease building energy loads. - CDPH has no control of the building performance and structural integrity of a CDPH leased building. CDPH Program Support Section will work with the building owner to adhere to Department of General Services' standard lease agreements.
Changes in Precipitation	
- A prolonged drought would be a worst-case scenario for the campus, which would result in the inability to use potable water, which is being used in cooling towers that support cooling in CDPH facilities.	- The CDPH owned Richmond Campus is currently moving toward a more drought tolerant landscape. - During the 2015 drought, CDPH brought non-potable water to fill 35,000 gallon supply water tanks placed next to cooling towers. Water trucks with reclaimed water from a nearby sewage treatment plant were used to refill the tanks. This was proven to be very efficient and can be a model for other facilities statewide. This operation would be repeated if future drought occurs. - In an event of flooding from increases in precipitation, CDPH established a general emergency action plan and guideline on what to do if sudden severe flooding occurs around the facility.
Sea Level Rise	
- CDPH owned Richmond Campus is not expected to have adverse effects with rising sea levels.	- CDPH will look at future plans to relocate facility functions if sea level rises above the current location.

Climate Change in Department Plans and Programs

Plans that have incorporated climate	How incorporated
Sustainability Roadmap 2018-2019	--

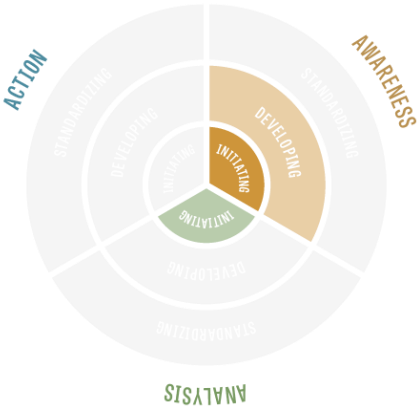
Programs that have incorporated climate	Plans or Programs that have yet to incorporate climate change
N/A or unreported	*N/A or unreported*

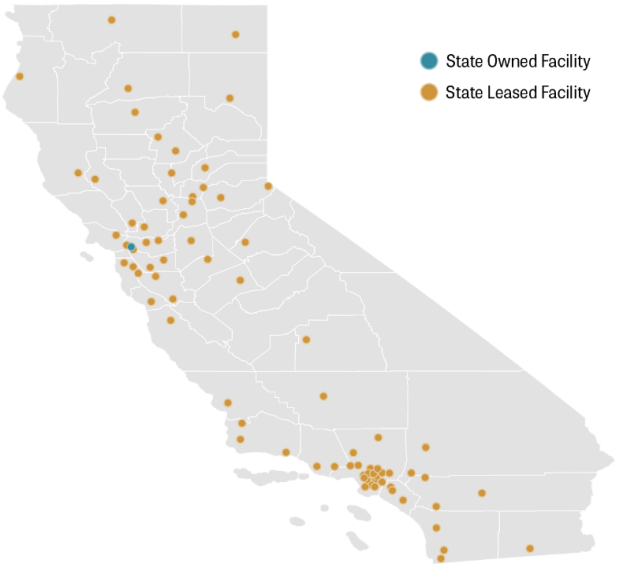
Process Characteristics

Coordination and Collaboration
The California Department Public Health (CDPH) identified relevant legislation and state resources through the Sustainability Roadmap. The Department has stated that it will coordinate with the Department of General Services on the incorporation of climate change in planning for its leased facilities.
Organizational Capacity
It is unclear the full extent of CDPH's organizational capacity due to the level of detail provided in the SR Adaptation Chapter.
Equity and Community Resilience
CDPH's owned Richmond Campus is a secured campus that does not interact with surrounding vulnerable communities. The Richmond campus could not be a resource for the community during an emergency because it is a secured non-public building. CDPH has no control of its leased buildings utility during the case of an emergency. Besides an emergency, the campus has been involved in providing work to other state agencies that train youths. CDPH used energy retrofit services from California Conservation Corps (CCC) with campus' lighting projects. The services provide job training to 18-25 year old corps members. CDPH will continue to use CCC for future energy and water projects.
Metrics/Using Best Available Science
The CDPH used Cal-Adapt data to conduct the mini vulnerability assessment of department facilities. It is unclear the department's intention of any further analysis of facilities or other plans and investments. It is also unclear the department's intention of creating and utilizing metrics to track progress.
Integrated Approach
The department has completed a Sustainability Roadmap, which includes both mitigation and adaptation chapters. It is unclear the level of analysis of or support for adaptation strategies that include mitigation co-benefits, or whether this will be a strategy in the future.
Natural Infrastructure
The CDPH owned Richmond Campus is currently moving toward a more drought tolerant landscape to reduce water consumption. CDPH Facilities Management Section will consider the use of natural infrastructure strategies if site is permitted. CDPH will work with Department of General Services on the use of natural and green infrastructure solutions in leased buildings. CDPH will continue to work with Department of General Services on new leased facilities or lease renewals to incorporate climate change in the planning.

To see this department's full Sustainability Roadmap and for more information on how this department has addressed topics such as urban heat island, natural infrastructure, and life-cycle cost accounting, please visit the full document at https://green.ca.gov/home/roadmaps.

California Department of Rehabilitation





Department Overview

The Department of Rehabilitation (DOR) works to ensure that all Americans have the opportunity to learn and develop skills, engage in productive work, make choices about their daily lives, and participate fully in community life. DOR provides vocational counseling, guidance, and services to individuals with disabilities to prepare for, obtain and maintain employment, and to live independently in their communities. Because the DOR is mainly comprised of privately leased offices, these present the biggest challenge and opportunity related to climate adaptation. To address both the need to service existing and potential DOR clients, as well as be cognizant of the climate impacts, the DOR is in the process of amending its criteria for field office placement to include climate impacts.

Existing Facilities[†]	
Owned	1
Leased	152
Total Square Feet	408,847

Phase Evaluation

Awareness
The California Department of Rehabilitation (DOR) is primarily in the awareness stage of adaptation planning and implementation. The department is categorized between a maturity level 1 (initiating) and 2 (developing). While this is the department's first time analyzing climate impacts to state facilities and operations, the Sustainability Roadmap provides an analysis of all relevant climate impacts. DOR is also currently working to incorporate climate considerations into their criteria for field office placement, which encompasses the majority of the department's facilities.
Analysis
DOR is categorized at maturity level 1 (initiating) in the analysis phase because the department does not yet have a plan that includes strategies that reference an in-depth vulnerability assessment. To advance in this category, the department should begin strategy assessment and selection using clearly defined evaluation metrics across multiple criteria, such as feasibility and co-benefits.
Action
From the information provided in the Sustainability Roadmap Adaptation Chapter, DOR is not yet in the action phase. The department is identifying some strategies to respond to climate impacts but is not yet implementing any strategies. However, the department is considering relocation for some of its leased facilities.

[†] "Existing facilities" may include but are not limited to any of the following facility types: office buildings, parking spaces, storage facilities (refrigerated and nonrefrigerated), warehouses, electric vehicle charging stations, air monitoring stations, airports, marinas, greenhouses, forest management sites, field offices, laboratories, communication towers, etc.

Impacts and Strategy Summaries

Impacts	Strategies
Changing Temperature and Extreme Heat	
- Increased utilities costs, either through separated metering or higher rental rates if utilities are included in the lease. - More strain on the building's environmental system, which could result in HVAC failure and corresponding temporary DOR office closure. - Impact the health and safety of both DOR staff and consumers who visit the facility.	- The DOR is in the process of amending privately leased field office site selection criteria to include climate change consideration, such as extreme heat. (However, because the DOR services must be available to all California individuals with disabilities, there will be occasions when the DOR will need to locate a field office in an area with projected extreme heat impacts). - Work cooperatively with the Department of General Services (DGS) and the location's lessor when negotiating a potential lease to formulate an extreme heat contingency plan and address preventative heat impact building modifications. - Connecting with DOR consumers electronically, through the use of Skype and other means of providing remote counseling.
Changes in Precipitation	
- Because of the employment assistance provided by the DOR, precipitation levels are not a significant impact on the way the DOR does business, unless the severity of the precipitation impacts safety and/or disrupts public and private transit that DOR employees and consumers would use to access DOR facilities.	- DOR will work with the DGS and the lessor to address potential impacts to DOR field offices where change to precipitation may impact building function or access to DOR services. - DOR is already assessing alternative field office locations for one facility that has experienced flooding.
Sea Level Rise	
- In total, four DOR privately leased offices are in current flood risk zones and fourteen additional offices are near flood risk zones. Of the fourteen, the majority are privately leased offices, but two locations are in state-owned, DGS managed buildings and one is DOR owned, the Orientation Center for the Blind (OCB). - For the DOR's owned OCB, in Albany, the risks from rising sea levels in the San Francisco Bay area will need to be continually monitored for changes.	- In 2018, the DOR will be including climate risks to the parameters reviewed in determining field office placement. - The San Francisco Bay Conservation and Development Commission provide planning and current project information that the DOR will utilize to develop an OCB impact plan over the coming years to address rising sea levels. - The OCB has explored building up the natural infrastructure of the property to minimize future flooding impacts, including utilizing assistance from the California Conservation Corps. - In 2018, the DOR will reassess the flood risks to the facility and if warranted, develop a phased approach to infrastructure improvements to spread the modifications and cost over a manageable, reasonable period. - Until infrastructure modifications are complete, OCB flood contingency plans will also be reviewed and modified, if needed, for the safety of the students and DOR staff, and the continuation of the facility.

Climate Change in Department Plans and Programs

Plans that have incorporated climate	How incorporated
Sustainability Roadmap 2018-2019	--

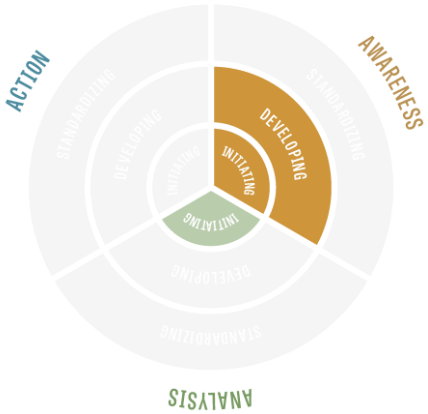
Programs that have incorporated climate	Plans or Programs that have yet to incorporate climate change
N/A	DOR 2013-2018 Strategic Plan (under review)

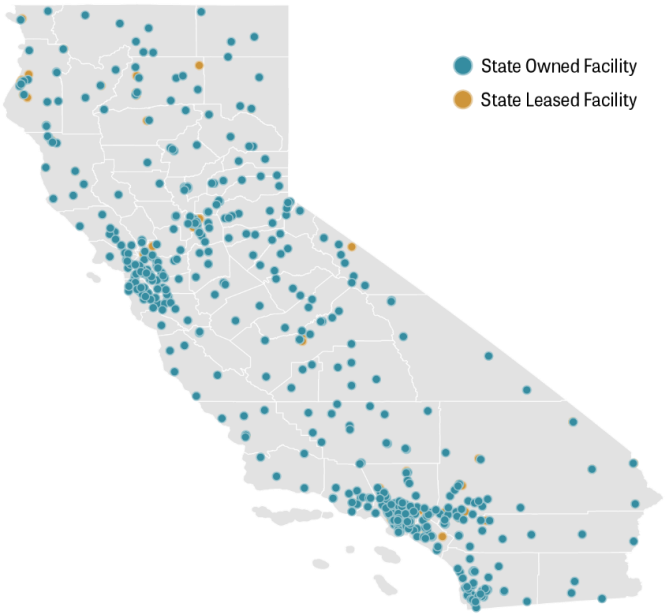
Process Characteristics

Coordination and Collaboration
The California Department of Rehabilitation (DOR) identified relevant legislation and state resources through the Sustainability Roadmap. The department also coordinates with DGS, California Conservation Corps, and local agencies to determine solutions for some of the department's impacted facilities.
Organizational Capacity
The DOR has incorporated a Sustainability Analyst position into the department to continue to monitor climate change impacts and develop climate change response plans. This position will work cooperatively with DOR business areas and other stakeholders to identify, incorporate, and monitor sustainability opportunities and efforts within the DOR.
Equity and Community Resilience
The DOR provides consultation, counseling and vocational rehabilitation, and works with community partners in assisting individuals with disabilities in obtaining employment. Vulnerable populations can include individuals with disabilities and it is the DOR mandate to serve these California residents. To be able to provide services to individuals with disabilities, the DOR has field offices throughout California. In addition, to alleviate vulnerability of these communities, the DOR works with community stakeholders to provide advocacy to assist individuals with disabilities to live independently and in equality. The DOR also encourages employers to recognize the value and talent that individuals with disabilities add to the workplace and community.
Metrics/Using Best Available Science
Current DOR field office selection criterion is being amended to include climate impacts. The amendments will include, but not be limited to risks associated with increases in temperatures, changes in precipitation, sea level changes, vulnerable and disadvantaged communities, and urban heat islands. The DOR used Cal-Adapt data, but also utilized additional climate data from the Pacific Institute to reference current and potential flood risk to DOR field offices.
Integrated Approach
The department has completed a Sustainability Roadmap, which includes both mitigation and adaptation chapters. It is unclear the level of analysis of or support for adaptation strategies that include mitigation co-benefits, or whether this will be a strategy in the future.
Natural Infrastructure
The primary opportunity for the DOR to utilize natural infrastructure to protect existing facilities is with the OCB. The OCB has and continues to work cooperatively with City of Albany, local preservation groups and other stakeholders towards the maintenance of the creek and surrounding area.

To see this department's full Sustainability Roadmap and for more information on how this department has addressed topics such as urban heat island, natural infrastructure, and life-cycle cost accounting, please visit the full document at https://green.ca.gov/home/roadmaps.

California Department of Transportation





Department Overview

Caltrans' mission is to "provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability." The department served as a contributor to the Safeguarding California Climate Adaptation Strategy, and is currently taking multiple steps to prepare the department's operations for climate change. In addition to completing a Sustainability Roadmap Adaptation Chapter, Caltrans is currently conducting Climate Change Vulnerability Assessments of the State Highway System (SHS) in each of Caltrans' 12 districts and intends to complete all 12 assessments by December 2019 and develop adaptation guidance by early 2021.

Existing Facilities[†]	
Owned	505
Leased	147
Total Square Feet	10,562,433

Phase Evaluation

Awareness
Caltrans is primarily in the awareness stage of adaptation planning and implementation. The department is categorized at maturity level 2 (developing). In addition to having growing internal support and engagement on climate change adaptation, the department is in the process of carrying out vulnerability assessments for all 12 districts and is developing a Climate Action Report, which will identify plans, and strategies Caltrans can implement to adapt to more extreme weather. These early planning stage actions combined with the completion of a 2017 Sustainability Roadmap show that the department is well positioned to move into the Analysis and Action phases.
Analysis
Caltrans is categorized at maturity level 1 (initiating) in the analysis phase. The department does not yet have a plan that includes strategies that reference an in-depth vulnerability assessment, but the department is in the process of carrying out these in-depth vulnerability assessments. The department does have strategies and commitments for actions that address impacts identified by the Sustainability Roadmap, which goes beyond the requirements of the Sustainability Roadmap template.
Action
From the information provided in the Sustainability Roadmap Adaptation Chapter, Caltrans is not yet in the action phase. The department is currently identifying strategies to respond to climate impacts but is not yet implementing strategies. However, it is important to note that the department is integrating climate change into its plans and funding.

[†] "Existing facilities" may include but are not limited to any of the following facility types: office buildings, parking spaces, storage facilities (refrigerated and nonrefrigerated), warehouses, electric vehicle charging stations, air monitoring stations, airports, marinas, greenhouses, forest management sites, field offices, laboratories, communication towers, etc.

Impacts and Strategy Summaries

Impacts	Strategies
Changing Temperature and Extreme Heat	
- Extreme heat could decrease a building's service life by degrading roofs and walls, heating, ventilation and air conditioning (HVAC) systems, and insulation, as well as increasing wear and tear on building materials — leading to higher facility maintenance and operation costs. - Extreme heat events could create unsafe working conditions and lead to negative health affects for employees such as general discomfort, respiratory difficulties, heat cramps and exhaustion, non-fatal heat stroke, and heat-related mortality. - More extreme heat events could overload local power infrastructure.	- Monitoring potential climate change impacts; such as extreme heat. - Shading buildings with vegetation (i.e., trees); use solar panels as canopies - Insulating buildings more effectively - Reviewing and improving use of air conditioning and other indoor cooling strategies - Using cool roofing materials - Applying energy efficiency measures such as wall insulation and energy efficient windows - Applying current Energy Star efficient systems - Using heat tolerant AC materials
Changes in Precipitation	
- More precipitation from rain instead of snow could result in greater flooding, along with shifts in runoff timing (earlier) and runoff volumes (higher). - Changes in moisture levels can lead to a reduction of design safety factors, more repairs and maintenance, service disruptions, risk for waterborne disease outbreaks from overloaded sewage systems and water treatment facilities, and increased liability as a result. - Extreme precipitation could lead to higher levels of mold at facilities, which could require facility closures and/or prevent employees from entering specific buildings. - Caltrans employees cannot respond to highway emergencies or provide essential maintenance and operation for the safety of the traveling public whenever facilities become inoperable or inaccessible.	- Caltrans will gather additional data and develop adaptation measures for buildings that consider criticality, likelihood, consequences, length of disruption, and resources available. Considered strategies will include: - Enhanced monitoring of changes in precipitation - Prior to building, avoiding development in locations with increased flood risk locations whenever if possible - Designing facilities and using materials that can withstand flooding - Rain water capture for irrigation at the facility - Using Energy Star efficient systems to replace the cooling effect of rain water - Relocating facility sites outside of potential high wind zones and/or above new flood levels or to higher ground within the sites - Further improving wastewater recycling to create new potable water - As needed, replacing water-intensive landscaping with native, drought-resistant plants
Sea Level Rise	
- Rising sea levels will inundate coastal areas and lead to increased flooding from storm surges. - Facilities are at risk of flooding during king tides and storm surge.	Potential measures for addressing SLR include: - Relocating buildings outside of new potential flood zones associated with increases in sea level (yet to be determined) and/or above new flood levels or to higher ground within the facility sites - Temporarily closing buildings and relocating services in the event of extreme weather and/or damage - Elevating electrical equipment and structures above higher flood and expected sea levels

Climate Change in Department Plans and Programs

Plans that have incorporated climate	How incorporated
California Transportation Plan	The Plan supports the state's climate goals and renewable energy goals, as described by CTP Goal 2, Policy 3: "Adapt the Transportation System to Reduce Impacts from Climate Change"
RTP Guidelines	Regional Transportation Planning Areas are encouraged to integrate policies and strategies that support state climate change policies in the development of Regional Transportation Plans
Pre-PID Project Nomination Process	As criteria in the scoping of all Caltrans projects
W&WW APSs	Preparation of each APS
Sustainability Roadmap 2018-2019	--

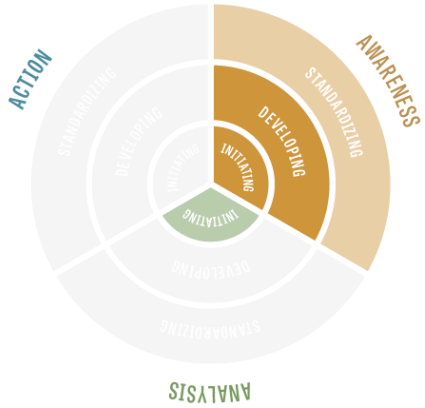
Programs that have incorporated climate	Plans or Programs that have yet to incorporate climate change
State Transportation Improvement Program Congested Corridors Program Active Transportation Program Transit and Intercity Rail Capital Program (TIRCP) Low Carbon Transit Operations Program (LCTOP)	California Aviation System Plan Trade Corridors Enhancement Program SHOPP Program

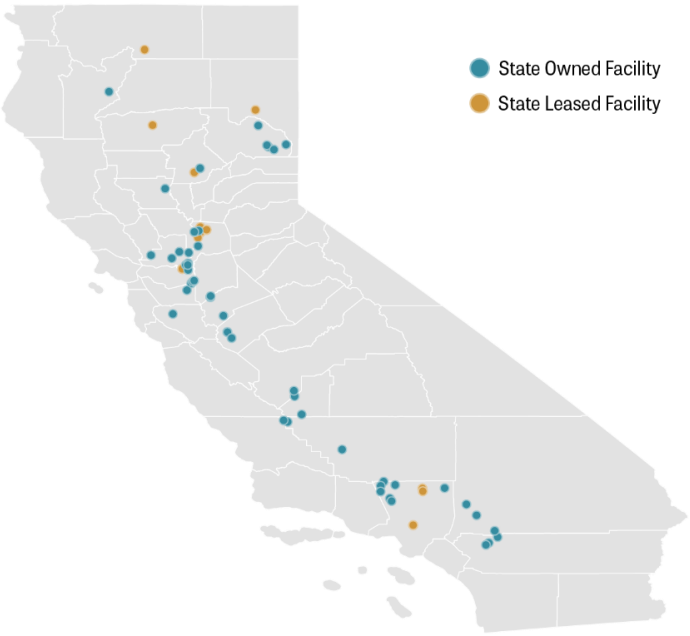
Process Characteristics

Coordination and Collaboration
Caltrans exhibits commitments to both internal and external coordination. The department has committed to convening a cross-functional Adaptation Working Group including individuals from sustainability, business operations, traffic operations, maintenance, equipment, transportation planning, and information technology department units. Caltrans has also committed to continuing participation in Safeguarding California and the Climate Safe Infrastructure Working Group, and has plans to develop communications and training material focused on climate adaptation and resilience in connection with the Department's sustainability priority "Prepare for climate change and extreme weather".
Organizational Capacity
Caltrans has staff dedicated to climate change, however it is unclear whether the current level of capacity is sufficient.
Equity and Community Resilience
Due to its mission and activities, most Caltrans' building facilities do not provide general access to the public. However, many of Caltrans' facilities, such as District Offices and Maintenance Stations, have communication capabilities that can provide coordination, assistance, and support for other agencies responding to climate-related events affecting regional and local populations as a whole, and vulnerable populations in particular. For example, Caltrans works extensively with the California Office of Emergency Services to provide resources and personnel during catastrophic events. Caltrans is also engaged in multiple efforts to reduce the negative impacts from the transportation system by reducing pollution associated with the system, reducing urban heat island effects with shade and functional green space, absorbing stormwater with green infrastructure, and increasing opportunities for active transportation.
Metrics/Using Best Available Science
The data used to inform the SR Adaptation Chapter is from Cal-Adapt, CalEnviroScreen 3.0, and the Urban Heat Island Index tool. The Vulnerability Assessments being developed by Caltrans for the State Highway System use values derived from each of the 10 California Global Climate Models (GCMs), including the four required under Representative Carbon Pathway (RCP) 8.5.
Integrated Approach
The department has completed a Sustainability Roadmap, which includes both mitigation and adaptation chapters. It is unclear the level of analysis of or support for adaptation strategies that include mitigation co-benefits, or whether this will be a strategy in the future.
Natural Infrastructure
The Water and Wastewater (W&WW) Branch (located within the Caltrans Division of Engineering Services) identifies natural and green infrastructure solutions in all Advanced Planning Studies (APS) prepared for projects.

To see this department's full Sustainability Roadmap and for more information on how this department has addressed topics such as urban heat island, natural infrastructure, and life-cycle cost accounting, please visit the full document at https://green.ca.gov/home/roadmaps.

California Department of Water Resources





Department Overview

The Department of Water Resources (DWR) is responsible for managing and protecting California's water resources. DWR works with other agencies to benefit the State's people and to protect, restore and enhance the natural and human environments. The department completed its Greenhouse Gas Emissions Reduction Plan in 2012, and established a Climate Change Technical Advisory Group in 2012 to develop guidance for consistent incorporation and alignment of analysis for climate change impacts in its project and program planning activities. In 2014, DWR began its Climate Change Vulnerability Assessment, which is now in draft form. This Assessment is now being followed by the development of a Climate Adaptation Plan.

Existing Facilities[†]	
Owned	52
Leased	104
Total Square Feet	1,142,264

Phase Evaluation

Awareness
The Department of Water Resources (DWR) is categorized between maturity level 2 (developing) and standardizing 3 in the awareness phase. This is because the Sustainability Roadmap Adaptation Chapter is not the first time the department is considering climate. DWR began a Vulnerability Assessment in 2014, which is now in draft form. The assessment covers the potential climate-driven hazards to all DWR facilities, managed lands, operations, and staff activities.
Analysis
DWR is categorized at maturity level 1 in the analysis phase. While the department has taken great strides in the analysis phase, it has yet to complete a comprehensive document with strategies that address the vulnerabilities identified in the assessment. However, it is likely that the department will advance to maturity level 2 or 3 in the analysis phase within the next couple of years when the department's Adaptation Plan is complete. However, it should be noted that the department is already integrating climate impacts into many current programs. To advance into maturity level 3 (standardizing), the department's next steps in this phase should include the creation and evaluation of strategies for their comprehensive adaptation plan.
Action
From the information provided in the Sustainability Roadmap Adaptation Chapter, DWR is not yet in the action phase. The department is currently developing strategies to respond to climate impacts but is not yet implementing

[†] "Existing facilities" may include but are not limited to any of the following facility types: office buildings, parking spaces, storage facilities (refrigerated and nonrefrigerated), warehouses, electric vehicle charging stations, air monitoring stations, airports, marinas, greenhouses, forest management sites, field offices, laboratories, communication towers, etc.

these strategies. However, the department's individual facilities have been built to withstand changes in precipitation.

Impacts and Strategy Summaries

Impacts	Strategies
Changing Temperature and Extreme Heat	
-Increasing temperatures pose operational challenges associated with hydrological changes (type of precipitation and runoff timing) as well as potential health impacts to DWR staff, especially those working in the field. - Delays in completing scheduled work activities - Heat-related disruptions to the power grid that impact ability to operate (i.e. pumps go offline) - Short term increases in workload as scheduled activities get moved into shorter work windows, - Increased costs associated with higher staffing levels to offset the need for more on-site rest periods - Increases in staff sick days for existing health conditions exacerbated by heat, and heat illness	- Outdoor staff activities may need to shift (i.e. either to a different time of day or to another work window), and implement the buddy system more frequently, and project delays associated with the need for more on-site cool down rest periods, schedule shifts, and longer acclimation periods for new staff may occur. - From the Extreme Heat Screening Questionnaire, supervisors have some ability to shift work schedules to the cooler portions of the day and nearly half indicated that they can reschedule certain work activities - In addition, DWR has protective measures for staff in place via the implementation of the Heat Illness Prevention Plan.
Changes in Precipitation	
- Changes in precipitation may affect average annual precipitation rates or the frequency, magnitude, and duration of extreme events, which can affect water quantity and quality and the ecosystems supported by the watershed and water systems dependent on the watersheds. - Loss of snowpack - Increase in water demand from agriculture and urban uses.	- DWR's individual facilities have been built to withstand a wide range of precipitation events, and are expected to withstand these changes in precipitation. - Structural improvements, such as the California Water Fix, non-structural improvements, such as upper meadow restoration in the Upper Feather River Watershed, and operational improvements, such as forecast-based operations of reservoirs, have been suggested strategies. These will be evaluated further in DWR's Climate Change Adaptation Plan.
Sea Level Rise	
- DWR owns and maintains several facilities within San Francisco Bay/Suisun Marsh that will be exposed to sea level rise, however, these facilities have low sensitivity (due to existing frequent contact with water) and thus overall risk from increasing sea level is low. - The Suisun Marsh is already being impacted by changes due to human activities, and will be impacted in the future by increasing inundation of mud flats and low-lying areas, levee and dike failures, and greater variation in environmental conditions (Moyle et al. 2014). Sensitivity to these changes is high, and adaptive capacity is complicated by a variety of factors such as multiple ownership and joint management entities, therefore Suisun Marsh itself is considered to have high risk. - Overall vulnerability of DWR's facilities to direct sea level rise is low and will continue to be low through mid-century, except for Suisun Marsh. However, failure of levees could change the vulnerability determinations.	- Planning for increased stresses on levees or by increasing habitat and 'natural infrastructure' to sustain species and provide other critical ecosystem services. - A broad range of habitat restoration projects will be pursued, including projects to address aquatic, sub-tidal, tidal, riparian, floodplain, and upland ecosystem needs.

Climate Change in Department Plans and Programs

Plans that have incorporated climate	How incorporated
California Water Plan Update 2013	Extensively
DWR Strategic Business Plan	Climate Change objectives included
DWR Climate Action Plan Phases I, II, III	GHG reduction targets, climate analysis guidance, VA/AP
Sustainability Roadmap 2018-2019	--

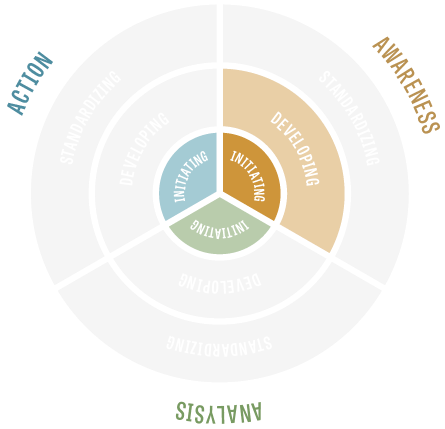
Programs that have incorporated climate	Plans or Programs that have yet to incorporate climate change
- Water Storage Investment Program (Prop 1, Ch 8, CA Water Commission) - Urban Flood Risk Reduction - Water Desalination Grant Program - Sustainable Groundwater Planning Grant Program - Proposition 1 Integrated Regional Water Management (Disadvantaged Community Involvement, Planning, and Implementation)	- California Safe Drinking Water Bond Law of 1988 (Prop 81) - Safe Drinking Water Containment Removal (Prop 50) - Flood Control Subventions (Proposition 1E) - Flood Corridor Program (Propositions 1E, 84 & 13) - Local Levee Assistance (Proposition 84) - Yuba Feather Flood Protection - Small Communities Flood Risk Reduction (Prop 1E) - Water Use Efficiency Grants

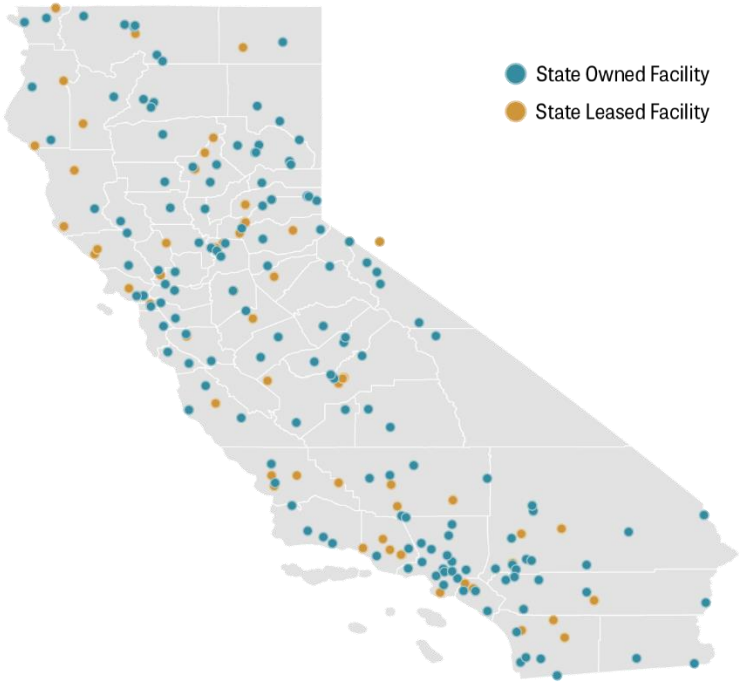
Process Characteristics

Coordination and Collaboration
It is unclear the full extent of DWR's coordination due to the level of detail provided in the SR Adaptation Chapter. However, DWR identified relevant legislation and state resources through the Sustainability Roadmap was a sector lead for Safeguarding California, the State's Climate Adaptation Strategy. DWR has worked with local and regional communities for the Integrated Regional Water Management (IRWM) program and the CA Water Plan Update 2013. The department also identified that it included coordination with local and regional agencies on almost all programs and plans.
Organizational Capacity
It is unclear the full extent of DWR's organizational capacity due to the level of detail provided in the SR Adaptation Chapter, however, DWR has dedicated climate change program staff.
Equity and Community Resilience
Through the SR Adaptation Chapter, DWR has identified its facilities that are located in disadvantaged communities. These facilities do not provide immediate, critical services to the surrounding populations. It is unclear the extent to which DWR facilities may be able to provide resources for local communities in the face of climate impacts and where those resources are needed.
Metrics/Using Best Available Science
In preparing its VA, DWR uses "a standardized approach to extract relevant information from an extensive existing body of knowledge about climate change." DWR convenes a California Climate Change Technical Advisory Group (CCTAG) to inform the department's planning and analytical processes with the latest scientific data.
Integrated Approach
The department has completed a Sustainability Roadmap, which includes both mitigation and adaptation chapters. The department has already completed a Climate Action Plan to address greenhouse gas reduction. It is unclear the level of analysis of or support for adaptation strategies that include mitigation co-benefits, or whether this will be assessed in DWR's developing Climate Adaptation Plan.
Natural Infrastructure
Environmental stewardship and ecosystem services are integrated into the California Water Plan Update 2013, the Central Valley Flood System Conservation Strategy, and the Safeguarding California Plan. The department clearly recognizes the importance of natural infrastructure by identifying multiple benefits that functioning ecosystems provide that are related to water management.

To see this department's full Sustainability Roadmap and for more information on how this department has addressed topics such as urban heat island, natural infrastructure, and life-cycle cost accounting, please visit the full document at https://green.ca.gov/home/roadmaps.

California Highway Patrol





Department Overview

The California Highway Patrol (CHP) is responsible for traffic law enforcement on California's 380,000 lane miles of roadway and general law enforcement on all State properties. The mission of the CHP is to provide the highest level of Safety, Service, and Security through protecting life and property, providing superior service to the public and assistance to allied agencies, and enhancing public trust through community outreach and partnership.

Existing Facilities[†]	
Owned	145
Leased	183
Total Square Feet	3,471,575

Phase Evaluation

Awareness
The California Highway Patrol is categorized mostly in the awareness phase. From the evaluation of the department's Sustainability Roadmap Adaptation Chapter, the department is considered to be mostly at a maturity level 1 (initiating) in the awareness phase, as this is the department's first time considering climate change in all plans. While the department is taking large strides in greenhouse gas reduction and sustainability, it is unclear the level of understanding the department has of adaptation specific strategies.
Analysis
CHP is considered to be at a maturity level 1 (initiating) in the analyses phase, as the Sustainability Roadmap Adaptation Chapter appears to be the department's first time analyzing climate impacts to facilities.
Action
CHP is considered to be at a maturity level 1 (initiating) in the action phase, as the department is implementing ad hoc adaptation strategies such as facilities relocation. The department is has yet to begin implementing strategies based off an in depth vulnerability assessment.

[†]"Existing facilities" may include but are not limited to any of the following facility types: office buildings, parking spaces, storage facilities (refrigerated and nonrefrigerated), warehouses, electric vehicle charging stations, air monitoring stations, airports, marinas, greenhouses, forest management sites, field offices, laboratories, communication towers, etc.

Impacts and Strategy Summaries

Impacts	Strategies
Changing Temperature and Extreme Heat	
- Higher maximum temperatures will lead to decreases in structural integrity, overutilization of environmental control equipment, and material deterioration on CHP's facilities. - Pose risk to occupant health and safety, as well as performance - Stress on equipment will lead to high maintenance costs and eventual replacement, which lowers the life cycle of the equipment.	- Develop new methods and infrastructure to manage temperature changes, such as new housing facilities for canine units and new standard operating procedures - Research new technologies and processes on existing infrastructure
Changes in Precipitation	
- Increase the maintenance and replacement costs for departmental equipment, vehicles, and facilities - Without adequate precipitation, the surrounding land and environment will be susceptible to flooding, due to lack of saturation of the earth. This can create obstacles for CHP employees to complete their duties and increase their safety risks. - In instances of drought, local sources will be unable to supply increased usage. - Continual drought conditions can make conditions highly erosive as winds will pick up the dried particles of earth and create sandstorms. These particulates will damage exterior surfaces, block airflow to air systems, and have negative effects on employee respiratory systems.	*(No strategies identified)*
Sea Level Rise	
- Sea level rise will cause increased flooding events or complete immersion underwater. - Roads, such as U.S. 101, will become unserviceable due to rain and flooding, thus causing an adverse effect on transportation and the ability of the CHP to complete its mission.	- Currently, the CHP is planning and assessing viable locations for the relocation of its Marin Area facility. - Hayward, Humboldt, Crescent City, and Redwood City facilities will be vacated pending construction of the new facilities. - As part of its internal assessment of new facility planning, the CHP can incorporate OPC data into future planning.

Climate Change in Department Plans and Programs

Plans that have incorporated climate	How incorporated
Five-Year Infrastructure Plan	Climate change is a portion of the assessment and evaluation process concerning resource management, facility operations, personnel education, and research and development for the CHP.
Energy Service Contractors	Evaluation and assessment of the CHP's infrastructure produce remedies to facility water and energy usage.
Landscaping Plan	The CHP reduced the use of water and energy at its facilities by incorporating natural infrastructure and minimizing its landscaping area at its facilities.
Water Grant	The replacement of high flow rate with low flow rate fixtures will help the CHP conserve water to meet its 2020 goals.
Sustainability Roadmap 2018-2019	--

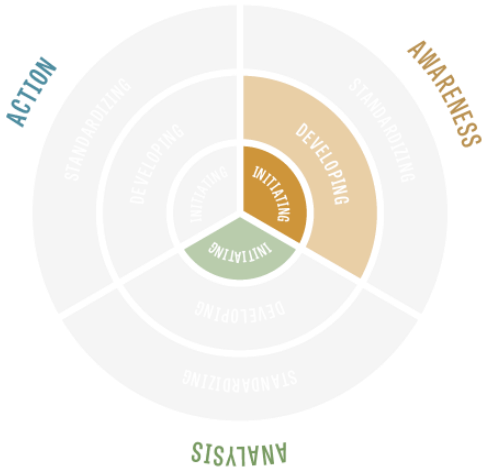
Programs that have incorporated climate	Plans or Programs that have yet to incorporate climate change
N/A or unreported	*N/A or unreported*

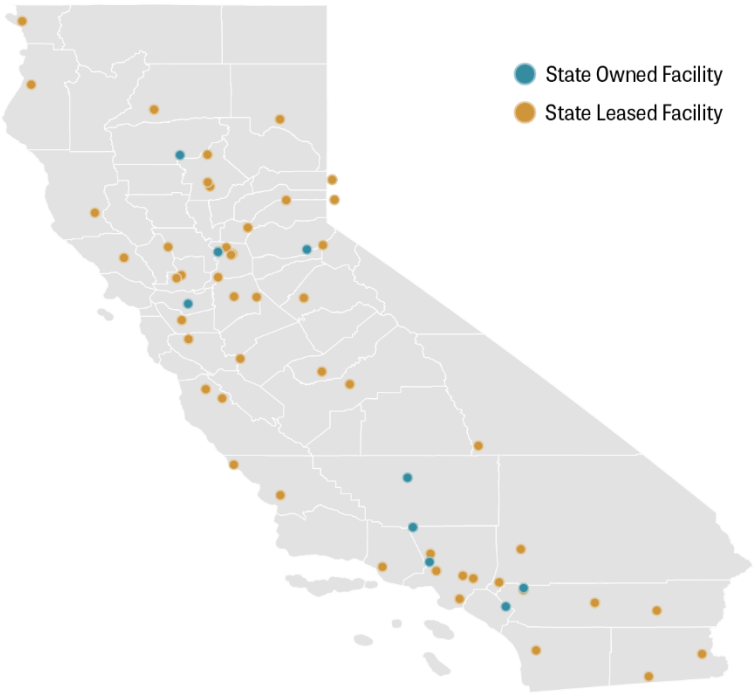
Process Characteristics

Coordination and Collaboration
A strong role of the CHP is to create, maintain, and strengthen relationships with local communities. It is unclear the level of coordination or engagement the CHP carries out to inform their planning efforts. CHP uses state data from CalEPA and CEC to inform current and future facility planning. The CHP seeks to strengthen its role by cooperative work and discussion with state and federal agencies to foster new ideas and methods to reduce the effects of climate change.
Organizational Capacity
It is unclear the full extent of CHP's organizational capacity due to the level of detail provided in the SR Adaptation Chapter.
Equity and Community Resilience
The CHP provides law enforcement services throughout the State, often times operating within, or near, vulnerable populations. The department helps mitigate trafficking of drugs on the State's roadways, apprehending violent motorists, and preventing contraband from entering state borders. The CHP runs programs that target certain vulnerable populations such as the Impact Teen Drivers program and the Age Well, Drive Smart program, which provides education and training for seniors. The CHP also provides services to the Emergency Management Sector Plan and the Transportation Sector Plan. Each location provides work force and equipment to support these plans by securing safe roadways, coordinating emergency response vehicles, and protecting vital infrastructure.
Metrics/Using Best Available Science
The CHP used Cal-Adapt data to conduct the mini vulnerability assessment of department facilities. It is unclear the department's intention of any further analysis of facilities or other plans and investments. It is also unclear the department's intention of creating and utilizing metrics to track progress.
Integrated Approach
CHP has completed a Sustainability Roadmap, which includes both mitigation and adaptation chapters. It is unclear the level of analysis of or support for adaptation strategies that include mitigation co-benefits.
Natural Infrastructure
The CHP has not completed an assessment of natural infrastructure strategies but has current plans and actions that support natural infrastructure. For instance, the department plans to reduce landscape contracts in new facilities by preserving the natural infrastructure at each location, and keeping landscaping to a minimum to preserve the local fauna surrounding the parking areas, which provided shade to the facility, as well as maintaining the soil to prevent mudslides.

To see this department's full Sustainability Roadmap and for more information on how this department has addressed topics such as urban heat island, natural infrastructure, and life-cycle cost accounting, please visit the full document at https://green.ca.gov/home/roadmaps.

California Governor's Office of Emergency Services





Department Overview

The mission of the Governor's Office of Emergency Services (Cal OES) is to protect lives and property, build capabilities, and support communities for a resilient California. Cal OES responds to and coordinates emergency activities to save lives and reduce property loss during disasters as well as coordinates recovery from the effects of disasters. On a day-to-day basis, Cal OES provides leadership, training, assistance and support to State and local agencies. Additionally Cal OES coordinates with Federal agencies in responding, planning, and preparing for the most effective use of Federal, State, local, and private sector resources when California experiences a catastrophic emergency. CalOES is a sector lead in the creation and implementation of Safeguarding California, the state's adaptation plan.

Existing Facilities[†]	
Owned	9
Leased	136
Total Square Feet	441,278

Phase Evaluation

Awareness
Cal OES is primarily in the awareness stage of adaptation planning and implementation. From the evaluation of the department's Sustainability Roadmap Adaptation Chapter, the department is considered to be between a maturity level 1 (initiating) and 2 (developing) in the awareness phase. While this is the department's first time analyzing climate impacts to state facilities and operations, the Sustainability Roadmap provides an analysis of all relevant climate impacts.
Analysis
Based on the information provided in the Sustainability Roadmap Adaptation Chapter, the department is considered to be at a maturity level 1 (initiating) in the analysis phase. The department does not yet have a plan that includes strategies that reference an in-depth vulnerability assessment, and has not conducted analysis of potential options for co-benefits, fiscal resources, or other criteria.
Action
From the evaluation of the Sustainability Roadmap, Cal OES has not yet engaged in implementing any planned or ad hoc strategies to respond to or plan for the impacts of climate change on facilities or operations.

[†] "Existing facilities" may include but are not limited to any of the following facility types: office buildings, parking spaces, storage facilities (refrigerated and nonrefrigerated), warehouses, electric vehicle charging stations, air monitoring stations, airports, marinas, greenhouses, forest management sites, field offices, laboratories, communication towers, etc.

Impacts and Strategy Summaries

Impacts	Strategies
Changing Temperature and Extreme Heat	
- Extreme heat events	- Training staff and implementing a catastrophic plan for climate related disasters will help to lessen the burden on communities affected by such events. - If any of these facilities are in jeopardy of not being useable, alternative locations called Joint Field Offices are set up to keep production running 24/7 /365; however, this results in critical time lost during disaster mitigation and is at a considerable additional cost.
Changes in Precipitation	
- High precipitation will affect certain facilities because of their location in a 100-year flood plain. Operations would stop at these facilities if they were to flood.	- In a catastrophic situation, employees would have to be relocated to a safer and/or higher elevation until the facility was made safe for staff to return. - As part of the planning process for flood hazards within the SMHMP, the State Hazard Mitigation Team meets on a regular basis to go over various implementation processes. Climate change has been incorporated into the SMHMP since 2007 and will continue to be an essential component in the future.
Sea Level Rise	
- Cal OES does not have facilities that would be affected by sea level rise.	- *NA*

Climate Change in Department Plans and Programs

Plans that have incorporated climate	How incorporated
State Hazard Mitigation Plan California Adaptation Planning Guide	Cal OES continues to grow its Adaptation plans to include all aspects of Climate change. These plans are working documents and are updated every two years to incorporate the new and growing changes California experiences.
Sustainability Roadmap 2018-2019	--

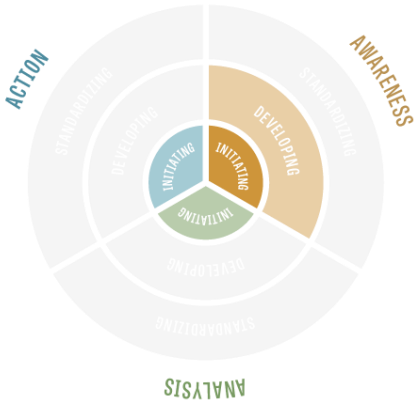
Programs that have incorporated climate	Plans or Programs that have yet to incorporate climate change
Local Hazard Mitigation Program	*N/A or unreported*

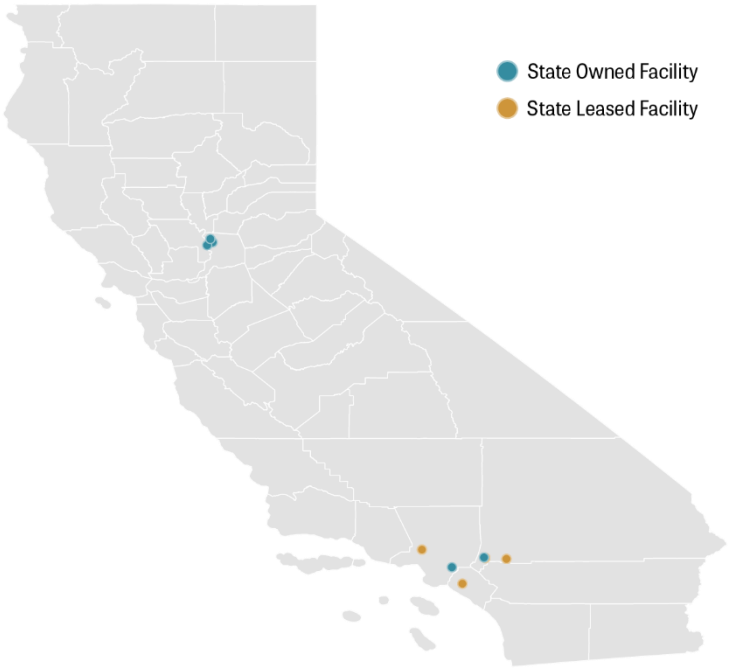
Process Characteristics

Coordination and Collaboration
Cal OES identified relevant legislation and state resources to use, comply, and coordinate with through the Sustainability Roadmap. Cal OES coordinates with Federal agencies in responding, planning, and preparing for the most effective use of Federal, State, local, and private sector resources when California experiences a catastrophic emergency. Due to the level of detail provided in the Sustainability Roadmap Adaptation Chapter, it is unclear if there is other ad hoc or ongoing collaboration with other state or local departments on adaptation planning for department facilities.
Organizational Capacity
It is unclear the full extent of Cal OES's organizational capacity due to the level of detail provided in the Sustainability Roadmap Adaptation Chapter.
Equity and Community Resilience
Cal OES has disaster plans in place to help all affected populations throughout California. If an extreme event takes place in a community where Cal OES is located, Cal OES will adjust staff working hours accordingly. Cal OES does not provide any additional information on department plans for vulnerable communities.
Metrics/Using Best Available Science
Cal OES used Cal-Adapt data to conduct the mini vulnerability assessment of department facilities. It is unclear the department's intention of any further analysis of facilities or other plans and investments. Cal OES plans to monitor changing climate conditions by using Cal-Adapt Climate tools and Urban Heat Island Interactive maps.
Integrated Approach
The department has completed a Sustainability Roadmap, which includes both mitigation and adaptation chapters. It is unclear the level of analysis of or support for adaptation strategies that include mitigation co-benefits, or whether this will be a strategy in the future.
Natural Infrastructure
Cal OES provided no narrative on their plans or actions around natural infrastructure.

To see this department's full Sustainability Roadmap and for more information on how this department has addressed topics such as urban heat island, natural infrastructure, and life-cycle cost accounting, please visit the full document at https://green.ca.gov/home/roadmaps.

California State Lottery Commission





Department Overview

The California State Lottery (Lottery) is administered by a five person commission appointed by the Governor and confirmed by the California Senate. In the 32 years since sales began in October 1985 through June 30, 2017, the Lottery has raised more than S32.5 billion for California public education. The Lottery operates a portfolio of 12 facilities to support its ongoing statewide operations. Its owned properties include Sacramento headquarters (HQ), the Northern Distribution Center (NDC), the Southern Distribution Center (SOC), the Sacramento District Office (DO), the Santa Fe Springs DO, Fresno DO and the San Diego DO. The Lottery is currently executing its Facilities Master Plan thereby converting the remaining 5 leased facilities to owned facilities over the next couple years. All new buildings are being designed to be Zero Net Energy, Leadership in Energy and Environmental Design (LEED) Certified, and incorporate resilient design when possible.

Existing Facilities[†]	
Owned	5
Leased	10
Total Square Feet	299,434

Phase Evaluation

Awareness
The evaluation of the California Lottery Commission's (CLC) Adaptation Chapter suggests that much of the Department's work currently takes place in the awareness phase of the evaluation framework. The department is considered to be at level 1 (initiating) and 2 (developing) in the awareness phase. While this is the department's first time analyzing climate impacts to state facilities and operations, the Sustainability Roadmap provides an analysis of all relevant climate impacts. The Lottery is currently revising its Business Continuity Program in coordination with the Governor's Office of Emergency Services. This includes a Business Continuity Plan (BCP), Disaster Recovery Plan (DRP), Incident Management Plan (IMP), site-specific Emergency Action Plans (EAP) and Crisis Communication Plan (CCP). A risk assessment will also be completed to determine the specific event types to be tested.
Analysis
CLC is categorized at maturity level 1 (initiating) in the analysis phase. The department does not yet have a plan that includes strategies that reference an in-depth vulnerability assessment. The CLC could advance in this phase of the

[†] "Existing facilities" may include but are not limited to any of the following facility types: office buildings, parking spaces, storage facilities (refrigerated and nonrefrigerated), warehouses, electric vehicle charging stations, air monitoring stations, airports, marinas, greenhouses, forest management sites, field offices, laboratories, communication towers, etc.

process by identifying, evaluating, prioritizing, and committing to strategies that are based on an in-depth vulnerability assessment.

Action

CLC is categorized at maturity level 1 (initiating) in the action phase because while the department has yet to adopt and implement a comprehensive plan that includes strategies that respond to an in-depth vulnerability assessment, the department has already incorporated adaptive building design into some facilities.

Impacts and Strategy Summaries

Impacts	Strategies
Changing Temperature and Extreme Heat	
- In the Lottery's distribution centers, the warehouse spaces are unconditioned, however office and breakrooms are conditioned. Extreme heat would pose no risk to the structural integrity of the buildings. However, extreme heat could cause low production levels due to employees requiring more breaks in the air conditioned breakroom. - The most critically affected of the five facilities are the two distribution centers, because without them Scratchers® ticket orders could not be distributed to the Lottery's retailers. Lack of distribution would affect the sale of Lottery Scratchers.	- Employees would be encouraged to drink the filtered refrigerated water available at the drinking fountains. - To prevent long-term estimated impacts, the lottery uses energy-efficient building envelope, including high-efficiency glazing on windows, high r-value insulation in walls and ceilings, and solar panels in the design and construction of its buildings. Daylight harvesting strategies have been incorporated as well.
Changes in Precipitation	
- Operation could stop at some facilities that are located in a 100-year flood plain if they were to flood.	- The lottery HQ facility was built with all IT servers installed on the third floor to prevent possible damage if a flood occurred. - In a catastrophic flood, operations would follow the lottery's Business Continuity Program. The Lottery is currently revising its Business Continuity Program in coordination with the Governor's Office of Emergency Services. The program consists of: a Business Continuity Plan (BCP), Disaster Recovery Plan (DRP), Incident Management Plan (IMP), site-specific Emergency Action Plans (EAP) and Crisis Communication Plan (CCP). A risk assessment will be completed to determine the specific event types to be tested.
Sea Level Rise	
- The Lottery does not have facilities that would be affected by sea level rise.	- N/A

Climate Change in Department Plans and Programs

Plans that have incorporated climate	How incorporated
Sustainability Roadmap 2018-2019	--

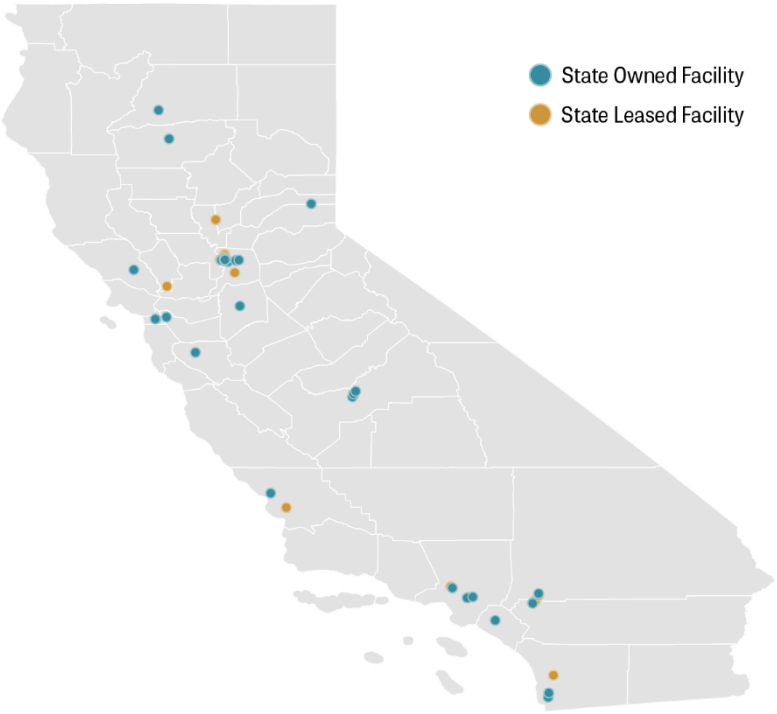
Programs that have incorporated climate	Plans or Programs that have yet to incorporate climate change
No or unreported	Lottery Funding Program

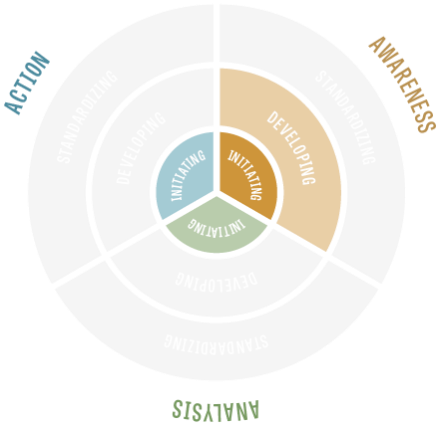
Process Characteristics

Coordination and Collaboration
The Lottery is currently revising its Business Continuity Program in coordination with the Governor's Office of Emergency Services.
Organizational Capacity
It is unclear the full extent of CLC's organizational capacity due to the level of detail provided in the SR Adaptation Chapter.
Equity and Community Resilience
If an extreme event takes place in the communities where the Lottery has offices, the Lottery will adjust staff working hours accordingly. During extreme heat situations, staff may be allowed to adjust their hours and report for duty in the early morning or late evening. Special consideration would be given to all affected staff. Half of the Lottery's facilities are located in disadvantaged communities. Lottery facilities provide access for Lottery customers to submit claims for prizes and obtain information related to gaming, commitments to education, and jackpots, among other things. Also, retailers can come to Lottery facilities for assistance with their ticket orders and invoices. The Lottery does not provide healthcare or social services to the community. The Lottery's facilities cannot be used during an emergency to provide access to information and other resources not pertaining to the Lottery. The Lottery participates in local job fairs when there are hiring needs for specific jobs. Job fairs help attract a diverse group of potential hires.
Metrics/Using Best Available Science
The data used to inform the Sustainability Roadmap Adaptation Chapter is from Cal-Adapt, CalEnviroScreen 3.0, and the Urban Heat Island Index tool.
Integrated Approach
The department has completed a Sustainability Roadmap, which includes both mitigation and adaptation chapters. It is unclear the level of analysis of or support for adaptation strategies that include mitigation co-benefits, or whether this will be a strategy in the future.
Natural Infrastructure
The Lottery will plant trees at Lottery locations in urban areas when possible to ease the effects of high heat days. The Lottery does not have buildings in locations where natural infrastructure will be affected. In the future, the Lottery will consider options to preserve natural infrastructure when appropriate.

To see this department's full Sustainability Roadmap and for more information on how this department has addressed topics such as urban heat island, natural infrastructure, and life-cycle cost accounting, please visit the full document at https://green.ca.gov/home/roadmaps

California Department of General Services





Department Overview

The California Department of General Services (DGS) serves as the state of California's business manager, providing state agencies with services including procurement and acquisition, real estate management and design, transportation, professional printing, administrative hearings, and funding and oversight for school construction. Through site and building orientation, thermal mass, shading, etc., designers and project managers develop design criteria to mitigate the effects of climate change on state infrastructure. DGS design-build teams consider the life cycle cost analysis of building systems, use ZNE screening to identify energy use intensity, and include criteria in new building projects that improve adaptability to current and future climate change.

Existing Facilities[†]	
Owned	81
Leased	42
Total Square Feet	20,429,883

Phase Evaluation

Awareness
The evaluation of the Department of General Services (DGS) Adaptation Chapter suggests that the department is considered to be between a maturity level 1 (initiating) and 2 (developing) in the awareness phase. While this is the department's first time analyzing climate impacts to state facilities and operations, the Sustainability Roadmap provides an analysis of all relevant climate impacts. The department could advance in this phase by identifying and prioritizing integrated approaches or strategies with mitigation co-benefits, identifying and coordinating with additional state or local agency partners and plans, and analyzing agency impacts and opportunities to aid vulnerable communities.
Analysis
DGS is categorized at a maturity level 1 (initiating), as the department has yet to complete a comprehensive plan that includes strategies that reference an in-depth vulnerability assessment. To advance in this category, the department should begin strategy assessment and selection using clearly defined evaluation metrics across multiple criteria, such as feasibility and co-benefits.

[†] "Existing facilities" may include but are not limited to any of the following facility types: office buildings, parking spaces, storage facilities (refrigerated and nonrefrigerated), warehouses, electric vehicle charging stations, air monitoring stations, airports, marinas, greenhouses, forest management sites, field offices, laboratories, communication towers, etc.

Action
From the information provided in the Sustainability Roadmap Adaptation Chapter, the department is categorized at maturity level 1 (initiating) in the action phase. While the department does not have a clear implementation pathway for its strategies, the department is completing adaptation actions on an ad hoc basis.

Impacts and Strategy Summaries

Impacts	Strategies
Changing Temperature and Extreme Heat	
- Rising temperatures mean more energy used during peak times to ensure employees are comfortable and healthy. - Structural integrity will be a concern due to the increased expansion and contraction of rigid structural members if a building experiences wider temperature ranges. - Increased energy use puts strain on the electrical grid, which can cause blackouts, but it also means higher utility bills and more wear on building systems. - More people are likely to use automobiles instead of taking alternative forms of transportation. This, coupled with higher temperatures, means formation of ground-level ozone and other secondary air pollutants, resulting in more degradation of air quality.	- Increase building envelope insulation. - Replace building envelope finishes with more heat-reflective materials. - Replace glazing with higher performing low-E glazing. - Add shade structures to south and west building façades. - Increase tree planting. Find ways to create more shade when providing landscapes to large parking areas and reduce unshaded grass or bare landscape areas. - Establishing higher set points during the cooling season will also help with addressing high-heat scenarios. - New furnishings and open office layouts will need to be designed to allow airflow distributed across open floors unlike the current compartmentalized tall cubicle layouts of existing state employee spaces.
Changes in Precipitation	
- Increased precipitation rates can have many effects on DGS facilities, including water infiltration into buildings through roofs, siding, subterranean infiltration, localized flooding and increased ambient air humidity. - Uncontrolled water intrusion can cause rusting in steel structural systems, dry rot in wood structural systems and displacement of foundations in soils expanded by moisture. - Occupant health becomes a risk when moisture lingers in concealed spaces where dangerous molds develop. - In the future there may be an increase in the risk of collapse, declining health and significant loss of value as a result of more rain or snow storms, subsidence damage, water encroachment, deteriorating indoor climate and reduced building lifetime. In the short term, stronger storms are the greatest challenge.	- Strategies DGS can employ to reduce the impact of changing precipitation start with a more robust system of maintaining building envelopes and replacement of exterior finishes before they fail. This will require the need to have a long-term budget strategy in place that anticipates the expected life cycle of building envelope systems.
Sea Level Rise	
- Currently there is only one DGS facility at risk of sea level rise from the Delta. This building is also one that has not aged well and has a host of maintenance issues that would require costly measures to repair.	- DGS will address the risk of sea level rise by either demolishing the existing building and constructing its own new building on the site (taking care to mitigate the sea level rise risks in the new design), or DGS will surplus sale the property and relocate the current state employees to areas outside of the risk zone.

Climate Change in Department Plans and Programs

Plans that have incorporated climate	How incorporated
State Administrative Manual (SAM) Chapter 1800	The Office of Sustainability has worked with state agencies and DGS divisions to develop policies related to climate change and other sustainability initiatives. These policies can be found in this document.
2018 Sustainability Roadmap	--

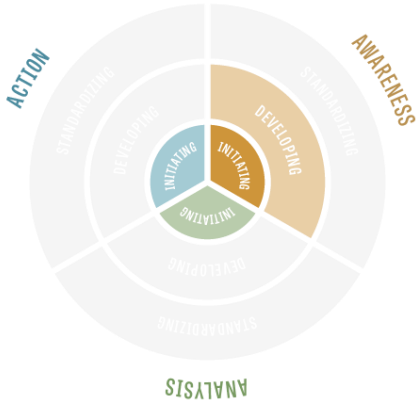
Programs that have incorporated climate	Plans or Programs that have yet to incorporate climate change
N/A or unreported	*N/A or unreported*

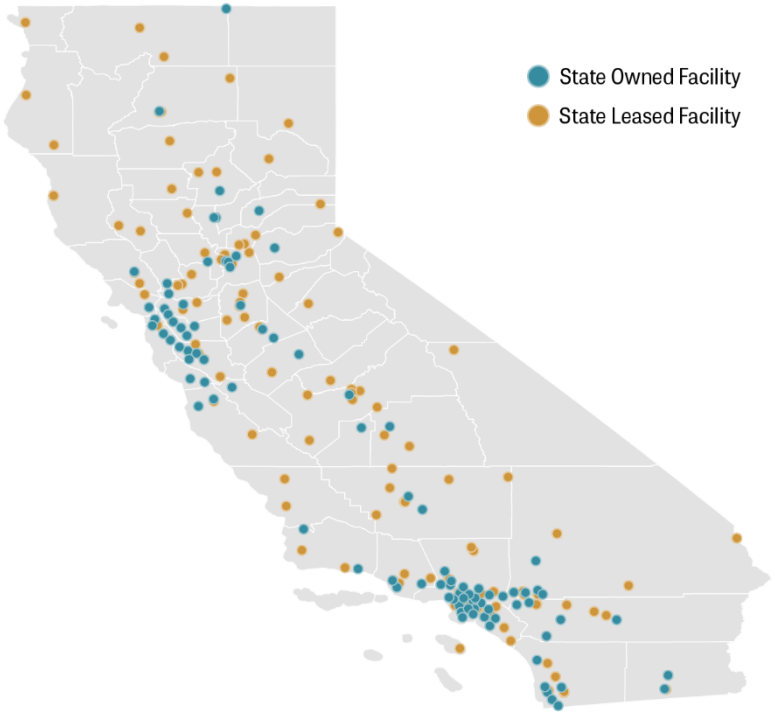
Process Characteristics

Coordination and Collaboration
The Department of General Services (DGS) identified relevant legislation and state resources through the Sustainability Roadmap.
Organizational Capacity
It is unclear the full extent of the department's organizational capacity due to the level of detail provided in the Sustainability Roadmap Adaptation Chapter.
Equity and Community Resilience
DGS-owned buildings contain many agencies that serve the community, including managed health care, social services, resource management agencies and more. They provide both direct public access and indirect access through the phone and internet-supported services housed in DGS-owned buildings. Most DGS-owned buildings in these disadvantaged communities have high densities of professional staff whose presence in these communities provides a stimulus to the local economy and provides the services mentioned above. DGS is very supportive of community programs and works hard with its Small Business and Minority programs to reach as much of California as possible. Where possible, state buildings should assist the public during these extreme weather events. At the very least, DGS should be a resource to staff and the community on climate change and how to respond and recover from climate-related risks.
Metrics/Using Best Available Science
DGS used Cal-Adapt data to conduct the mini vulnerability assessment of department facilities. DGS recognizes that changing climate conditions necessitate an adaptive management approach. An adaptive management approach is informed by tracking changing climate conditions and the performance of a plan or project. Building check points into a project or plan timeline can help to create a system for regular review and, if needed, adjustments.
Integrated Approach
The department has completed a Sustainability Roadmap, which includes both mitigation and adaptation chapters. It is unclear the level of analysis of or support for adaptation strategies that include mitigation co-benefits, or whether this will be a strategy in the future.
Natural Infrastructure
DGS is actively working to employ natural infrastructure changes to reduce the risks of climate change on our department's facilities. DGS has been actively reducing large areas of resource-thirsty lawns by replacing them with drought-tolerant native plant species. This reduces the amount of irrigation water and the use of fertilizers and pesticides. DGS can improve large surface parking lots to capture more rainwater with the installation of pervious paving materials in conjunction with the installation of subterranean runoff capture systems to keep rainwater on site.

To see this department's full Sustainability Roadmap and for more information on how this department has addressed topics such as urban heat island, natural infrastructure, and life-cycle cost accounting, please visit the full document at https://green.ca.gov/home/roadmaps.

California Department of Motor Vehicles





Department Overview

The California Department of Motor Vehicles (DMV) serves the public by licensing drivers, registering vehicles, securing identities, and regulating the motor vehicle industry. The most significant climate impacts and associated risks to DMV's facilities are extreme hot or cold temperatures that may cause heating, ventilation, and air conditioning (HVAC) failures, and winter storm events that may cause roof leaks and other water penetrations into DMV facilities. DMV continues to integrate climate change into all planning and investment including new construction, and has incorporate Executive Order B-30-15 into the department's guiding principles for existing facility and infrastructure planning processes.

Existing Facilities[†]	
Owned	97
Leased	263
Gross area (square feet)	4,577,783

Phase Evaluation

Awareness
The California Department of Motor Vehicles (DMV) is primarily in the awareness stage of adaptation planning and implementation. The department is categorized between a maturity level 1 (initiating) and 2 (developing). While this is the department's first time analyzing climate impacts to state facilities and operations, the Sustainability Roadmap provides an analysis of all relevant climate impacts.
Analysis
DMV is categorized at maturity level 1 (initiating) in the analysis phase. The department does not yet have a plan that includes strategies that reference an in-depth vulnerability assessment, and has not conducted analysis of potential options for co-benefits, fiscal resources, or other criteria.
Action
DMV is categorized at maturity level 1 (initiating) in the action phase as the department is not yet implementing any planned strategies to respond to the impacts of climate change, but has incorporated adaptive measures and building designs into some facilities.

[†] "Existing facilities" may include but are not limited to any of the following facility types: office buildings, parking spaces, storage facilities (refrigerated and nonrefrigerated), warehouses, electric vehicle charging stations, air monitoring stations, airports, marinas, greenhouses, forest management sites, field offices, laboratories, communication towers, etc.

Impacts and Strategy Summaries

Impacts	Strategies
Changing Temperature and Extreme Heat	
- Operational risks include situations where internal temperatures exceed Cal OSHA (California Occupational Safety and Health Administration) regulations or the HVAC fails to meet mandated outside air exchange requirements.	- To mitigate temperature and HVAC failure risks, DMV has prioritized the replacement of HV AC systems that have exceeded their lifecycle expectancy. - Opportunities for heat island reduction, shading for external customer lines, landscaping, lighter colors that reduce heat gain and carport mounted Photovoltaics (PV) are evaluated on a project level basis. - DMV will work with project engineers to ensure HVAC systems are designed with sufficient cooling capacity for days of higher heat, should temperatures continue to escalate over the next 25 to 50 years.
Changes in Precipitation	
- Increased precipitation's greatest impact on DMV facilities has historically been roof leaks, rather than flooding issues. - A worst-case scenario for DMV would include severe regional flooding in the event of dam failure.	- DMV prioritizes roof repair and replacement projects in its 5-Year Maintenance and Repair Plan based on age, condition and repair history, in order to minimize future water penetration problems. (Cool roofs are utilized for energy efficiency.) - New DMV facilities are designed and constructed to CALGreen code and may include first flush systems, bioswales and/or on-site storm water retention systems to mitigate localized flooding. - DMV locates facilities based on geographic proximity to its customer base, therefore, it is not possible to locate all field offices outside of flood zones or areas of potential flood risk. DMV does consider location alternatives on a project-level basis with preference to sites less likely to be impacted by precipitation, flooding, or other acts of nature.
Sea Level Rise	
- DMV facilities are not expected to be influenced by any foreseeable projected rise in sea level.	- NA or unreported

Climate Change in Department Plans and Programs

Plans that have incorporated climate	How incorporated
5 Year Infrastructure Plan	Project level engineering

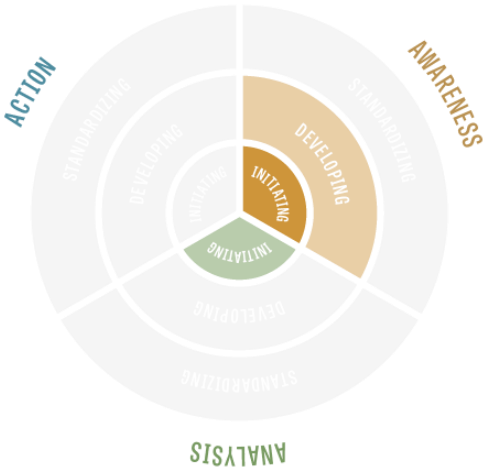
Programs that have incorporated climate	Plans or Programs that have yet to incorporate climate change
N/A or unreported	*N/A or unreported*

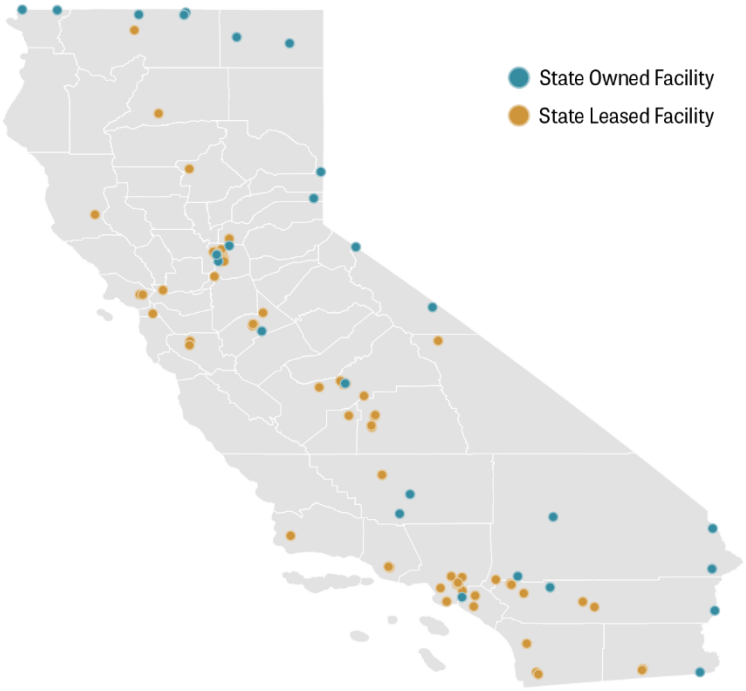
Process Characteristics

Coordination and Collaboration
The California Department Consumer Affairs (DCA) identified relevant legislation and state resources through the Sustainability Roadmap.
Organizational Capacity
DMV received $8 million of Section 6.1 funding via the Fiscal Year (FY) 2016-2017 budget. With this funding, DMV is replacing critical building systems in field offices, such as HVAC and roofing, in order to minimize the likelihood of sudden, unforeseen failures and office closures. Aside from this funding capacity, it is unclear the full extent of DMV's staff capacity to plan and implement adaptation strategies due to the level of detail provided in the Sustainability Roadmap Adaptation Chapter.
Equity and Community Resilience
DMV's large number of field offices provide proximate services to all California residents and are accessible by public transit. DMV facilities may help support local redevelopment and as an employer creates job opportunities within these communities.
Metrics/Using Best Available Science
Through the roadmap reporting and data obtained from Cal-Adapt, DMV will review changes in existing, future and predicted climates and temperature extremes. Due to the ongoing need for DMV's programs and corresponding facility needs, DMV considers lifecycle costs when implementing various maintenance, energy efficiency and repair projects. The anticipated lifecycle of building systems, including roofing, HVAC, paint, flooring, parking lot surfaces, lighting, is integrated into DMV's 5-Year Maintenance and Repair Plan. The department has committed to reviewing its own internal facility repair and maintenance projects tracking system to determine how temperature affects repair and replacement frequency, especially in service areas with the greatest potential climate change.
Integrated Approach
The department has completed a Sustainability Roadmap, which includes both mitigation and adaptation chapters. It is unclear the level of analysis of or support for adaptation strategies that include mitigation co-benefits, or whether this will be a strategy in the future.
Natural Infrastructure
Green infrastructure options are primarily in the form of landscaping and drainage and will be incorporated, where feasible, into new building designs and renovations. DMV's landscaping projects and new facility construction projects will seek opportunities to plant trees and vegetation that mitigate high heat days, while still responding to water conservation goals and policies.

To see this department's full Sustainability Roadmap and for more information on how this department has addressed topics such as urban heat island, natural infrastructure, and life-cycle cost accounting, please visit the full document at https://green.ca.gov/home/roadmaps

California Department of Food and Agriculture





Department Overview

The California Department of Food and Agriculture (CDFA) serves the citizens of California by promoting and protecting a safe, healthy food supply, and enhancing local and global agricultural trade, through efficient management, innovation, and sound science, with a commitment to environmental stewardship. CDFA currently owns 22 facilities throughout the State. These facilities provide a vast array of purposes for the Department. CDFA seeks guidance from DGS for all property management needs related to these facilities, from construction to minor maintenance repairs. CDFA recognizes the importance of conservation and climate adaptation and has committed to working closely with DGS to ensure all regulations are met for all new and existing properties. CDFA is also a sector lead for the state's adaptation plan, Safeguarding California.

Existing Facilities[†]	
Owned	26
Leased	134
Total Square Feet	7,310,730

Phase Evaluation

Awareness
The California Department of Food and Agriculture (CDFA) is primarily in the awareness stage of adaptation planning and implementation. From the evaluation of the department's Sustainability Roadmap Adaptation Chapter, the department is considered to be between a maturity level 1 (initiating) and 2 (developing) in the awareness phase. While this is the department's first time analyzing climate impacts to state facilities and operations, the Sustainability Roadmap provides an analysis of all relevant climate impacts.
Analysis
CDFA is categorized at maturity level 1 (initiating) in the analysis phase. The department does not yet have a plan that includes strategies that reference an in-depth vulnerability assessment, and has not conducted analysis of potential options for co-benefits, fiscal resources, or other criteria.
Action
The California Department of Food and Agriculture is no yet in the action phase, as the department is not yet implementing any adaptation strategies.

[†] "Existing facilities" may include but are not limited to any of the following facility types: office buildings, parking spaces, storage facilities (refrigerated and nonrefrigerated), warehouses, electric vehicle charging stations, air monitoring stations, airports, marinas, greenhouses, forest management sites, field offices, laboratories, communication towers, etc.

Impacts and Strategy Summaries

Impacts	Strategies
Changing Temperature and Extreme Heat	
- This rise in temperature shown above may increase the demand for energy used for cooling systems and outside temperatures may create heat advisory risks in the future for those working outdoors.	- CDFA remains vigilant in maintaining employee awareness, reminding employees of heat illness risks and prevention methods annually. - CDFA also releases additional heat advisory warnings to all employees whenever a heat event is anticipated. - CDFA will continue to consider various options and strategies to reduce the impact of changing temperatures on facility performance and to protect occupant health and safety (e.g., additional Heating, ventilation, and air conditioning capacity; shade structures or tree planting; relocation; etc.).
Changes in Precipitation	
- Since most of CDFA's facilities are inspection booths on the side of highways and freeways, the only anticipated changes would be outside the CDFA facilities. CDFA does not anticipate any impact on structural integrity, occupant health, or safety.	- NA or unreported
Sea Level Rise	
- None of CDFA's facilities will be effected by rising sea levels.	- NA or unreported

Climate Change in Department Plans and Programs

Plans that have incorporated climate	How incorporated
N/A or unreported	*N/A or unreported*

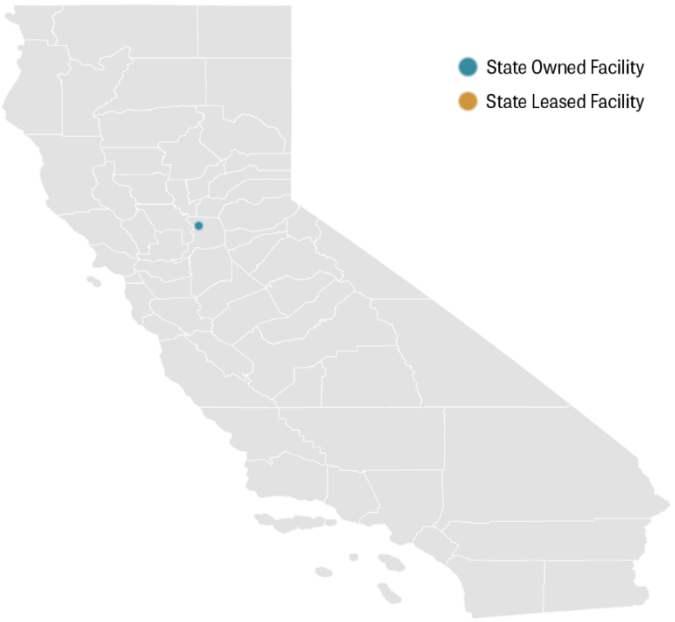
Programs that have incorporated climate	Plans or Programs that have yet to incorporate climate change
N/A or unreported	CDFA will consult with DGS Office of Sustainability regarding best practices from other departments that have integrated climate change into departmental planning.

Process Characteristics

Coordination and Collaboration
The California Department Food and Agriculture (CDFA) identified relevant legislation and state resources through the Sustainability Roadmap.
Organizational Capacity
It is unclear the full extent of CDFA's organizational capacity due to the level of detail provided in the Sustainability Roadmap Adaptation Chapter.
Equity and Community Resilience
No CDFA facilities are located in disadvantaged communities. No additional information was reported on vulnerable or disadvantaged communities.
Metrics/Using Best Available Science
The data used to inform the Sustainability Roadmap Adaptation Chapter is from Cal-Adapt, CalEnviroScreen 3.0, and the Urban Heat Island Index tool. It is unclear the department's intention of any further analysis of facilities or other plans and investments. CDFA saves annual data to compare to benchmarks and will continue to improve practices based off the information collected.
Integrated Approach
The department has completed a Sustainability Roadmap, which includes both mitigation and adaptation chapters. It is unclear the level of analysis of or support for adaptation strategies that include mitigation co-benefits, or whether this will be a strategy in the future.
Natural Infrastructure
CDFA will evaluate and consider selecting projects to employ natural infrastructure to reduce the risks of climate change to CDFA's facilities based on their suitability and cost-effectiveness. Future CDFA projects may include reducing impermeable surface areas surrounding facilities, implementing additional greening potentially with the use of green infrastructure as part of cooling strategies in public and private spaces, utilizing additional shading (such as trees, vegetation, or shade structures), or expanding the use of cool, porous, or sustainable materials in pavements.

To see this department's full Sustainability Roadmap and for more information on how this department has addressed topics such as urban heat island, natural infrastructure, and life-cycle cost accounting, please visit the full document at https://green.ca.gov/home/roadmaps.

California Exposition and State Fair



Department Overview

The California Exposition & State Fair (Cal Expo) mission is to create a State Fair experience reflecting California including its industries, agriculture, and diversity of its people, traditions, and trends shaping its future supported by year-round events. Cal Expo's Climate Change Adaptation Roadmap provides a planning document and commitment from Cal Expo to address the direction provided in the Governor's Sustainability Initiatives to plan for future changes in climate and to incorporate considerations of climate change into activities.

Existing Facilities[†]	
Owned	1
Leased	0
Total Square Feet	1,156,350

Phase Evaluation

Awareness
The California Exposition and State Fair (Cal Expo) is primarily in the awareness stage of adaptation planning and implementation. From the evaluation of the department's Sustainability Roadmap Adaptation Chapter, the department is considered to be between a maturity level 1 (initiating) and 2 (developing) in the awareness phase, but primarily at a maturity level 1. While this is the department's first time analyzing climate impacts to state facilities and operations, the Sustainability Roadmap provides an analysis of all relevant climate impacts.
Analysis
Cal Expo is categorized at maturity level 1 (initiating) in the analysis phase. The department does not yet have a plan that includes strategies that reference an in-depth vulnerability assessment, and has not conducted analysis of potential options for co-benefits, fiscal resources, or other criteria.
Action
Cal Expo is no yet in the action phase, as the department is not yet implementing any adaptation strategies.

[†] "Existing facilities" may include but are not limited to any of the following facility types: office buildings, parking spaces, storage facilities (refrigerated and nonrefrigerated), warehouses, electric vehicle charging stations, air monitoring stations, airports, marinas, greenhouses, forest management sites, field offices, laboratories, communication towers, etc.

Impacts and Strategy Summaries

Impacts	Strategies
Changing Temperature and Extreme Heat	
- Cal Expo has several large structures both in widths and heights that require large HV AC systems to run for long periods of time for cooling and heating purposes - many were built in the 1950's and require immediate attention and upgrades or outright replacement to meet today's building efficiency standards. - The cost of energy-efficient replacements will have a substantial financial impact to the overall Cal Expo budget.	- Cal Expo will consider the age of each system and the type of refrigerant used. The timeline for replacement will vary based on the age, condition and uses of the system; however, maintenance costs will continue to increase. Overall, will Cal Expo find it more cost-effective and energy-efficient to replace an older, breakdown-prone R-22 system with a new R-410A HVAC system. - Cal Expo will employ the following strategies to help with the changing temperatures and their impacts on our facility: 1. Migration from R22 refrigerants to more green-house-gas friendly refrigerants as the need for repair and replacement is required. 2. Consider energy efficient mechanical alternatives for cooling facility's such as low energy, high-efficient fans. 3. Install automatic doors to exposition centers/facilities to ensure proper cooling containment. 4. Install energy efficient systems utilizing technology to mitigate wasted cooling. 5. Cal Expo utilizes shading structures throughout several thousand square feet of land over the 400 acers of developed fair grounds.
Changes in Precipitation	
- *No specific impacts were identified*	- Cal Expo recently hired a contractor that provided an evaluation and roadmap for irrigation repairs and upgrades to help with water conservation. Part of the evaluation included sophisticated weather readers located on the grounds that can identify weather patterns, temperature, and air moisture. This technology allows the system to take readings and irrigate the many landscapes, avoiding over-watering using water efficiency modeling.
Sea Level Rise	
- Although rising sea levels are a concern for Cal Expo, Cal Expo does not anticipate that phenomenon having an impact on the department. - Cal Expo is identified as a facility that will be used as an evacuation facility housing victims of natural disasters being evacuated and/or displaced.	- Cal Expo has will identify opportunities for capital improvements to ensure facilities are properly maintained for 'safe harbor' for those temporary displaced.

Climate Change in Department Plans and Programs

Plans that have incorporated climate	How incorporated
Irrigation Systems	Smart Technology

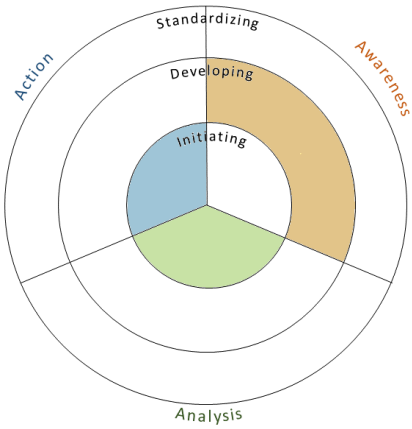
Programs that have incorporated climate	Plans or Programs that have yet to incorporate climate change
N/A or unreported	*N/A or unreported*

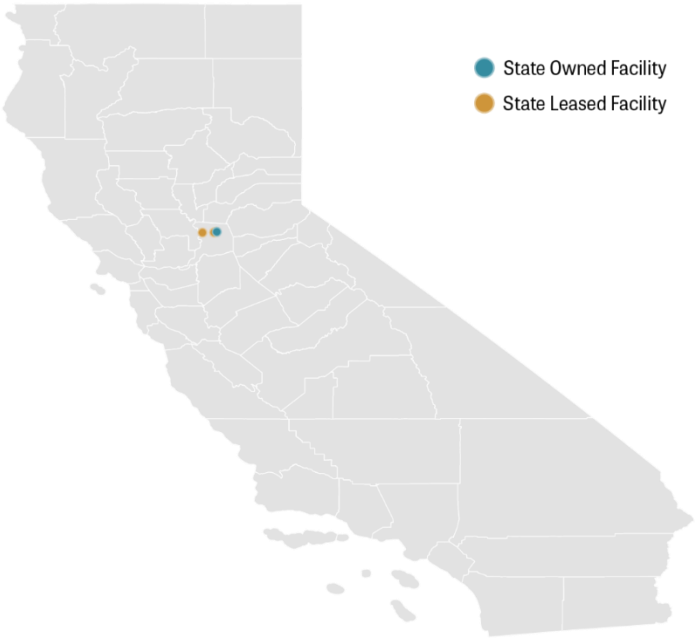
Process Characteristics

Coordination and Collaboration
Cal Expo identified relevant legislation and state resources through the Sustainability Roadmap. The department coordinates with local and regional agencies when applicable.
Organizational Capacity
It is unclear the full extent of Cal Expo's organizational capacity due to the level of detail provided in the Sustainability Roadmap Adaptation Chapter. Cal Expo reports committing to empowering its staff and partners by increasing awareness of ways that climate change may affect their ability to implement effective planning processes, and by providing them with data, information, measuring outcomes and tools to integrate climate adaptation into their work.
Equity and Community Resilience
Cal Expo places special emphasis on working with overburdened populations and those most vulnerable to climate change impacts. Cal Expo is also concerned about the potential impacts on human health and the environment in rural and agricultural communities. Some climate change effects such as long-term drought or severe storms have the potential to cause severe effects on local economies. Cal Expo uses the annual State Fair to help agricultural programs understand effective and efficient agricultural best practices. These types of educational programs help industry workers and leaders.
Metrics/Using Best Available Science
The data used to inform the Sustainability Roadmap Adaptation Chapter is from Cal-Adapt, CalEnviroScreen 3.0, and the Urban Heat Island Index tool. It is unclear the department's intention of any further analysis of facilities or other plans and investments.
Integrated Approach
The department has completed a Sustainability Roadmap, which includes both mitigation and adaptation chapters. It is unclear the level of analysis of or support for adaptation strategies that include mitigation co-benefits, or whether this will be a strategy in the future.
Natural Infrastructure
Cal Expo is identifying opportunities for infrastructure improvements with focus on sustainability in project planning.

To see this department's full Sustainability Roadmap and for more information on how this department has addressed topics such as urban heat island, natural infrastructure, and life-cycle cost accounting, please visit the full document at https://green.ca.gov/home/roadmaps.

California Department of Technology





Department Overview

The California Department of Technology (CDT) Gold Camp Data Center provides information technology services to many state, county, federal and local government entities throughout California. Through the use of a scalable, reliable and secure statewide network, combined with expertise in voice and data technologies, CDT delivers comprehensive, cost-effective computing, networking, electronic messaging, and training solutions to benefit the people of California. In this roadmap, CDT uses the assumption that the current state owned data center will have an additional 25 years of effective use.

Existing Facilities[†]	
Owned	1
Leased	8
Total Square Feet	272,640

Phase Evaluation

Awareness
The evaluation of the California Department of Technology (CDT) Adaptation Chapter suggests that the department is considered to be between a maturity level 1 (initiating) and 2 (developing) in the awareness phase. While this is the department's first time analyzing climate impacts to state facilities and operations, the Sustainability Roadmap provides an analysis of all relevant climate impacts. The department could advance in this phase by identifying and prioritizing integrated approaches or strategies with mitigation co-benefits.
Analysis
DGS is categorized at a maturity level 1 (initiating), as the department has yet to complete a comprehensive plan that includes strategies that reference an in-depth vulnerability assessment. To advance in this category, the department should begin strategy assessment and selection using clearly defined evaluation metrics across multiple criteria, such as feasibility and co-benefits.
Action
From the information provided in the Sustainability Roadmap Adaptation Chapter, the department is not yet in the action phase as the department is not yet implementing any adaptation strategies.

[†] "Existing facilities" may include but are not limited to any of the following facility types: office buildings, parking spaces, storage facilities (refrigerated and nonrefrigerated), warehouses, electric vehicle charging stations, air monitoring stations, airports, marinas, greenhouses, forest management sites, field offices, laboratories, communication towers, etc.

Impacts and Strategy Summaries

Impacts	Strategies
Changing Temperature and Extreme Heat	
- An increase in mean maximum temperature would increase power usage effectiveness, water usage, power usage and reduce overall cooling performance. - An increase in extreme heat events would affect useful life of the Data Center's cooling equipment.	- The facility can operate independently, using on-site diesel generators for an extended period of time in the event of a utility failure. - To reduce the impact of changing temperatures, the Department will be installing a cool roof and will consider landscaping options. - The installation of the solar canopies will provide added square footage of shade to the facility parking lot. - The Department utilizes an employee awareness campaign to make employees aware of changes to the buildings during temperature changes. - Based on the rolling 15-year plan, climate adaptation will be considered for mechanical equipment, but in the event of potential catastrophic failure, a planned shutdown and replacement of the data center facility will be implemented.
Changes in Precipitation	
- Although the Cal-Adapt data shows increases in annual precipitation, CDT bases planning on climate models that show extended future drought conditions. - If extended drought conditions require the facility to use less water, the lifespan and reliability of the cooling equipment would diminish.	- To reduce the impact of facility performance due to changing precipitation, the Department has planned to recapture cooling tower grey water in the event of drought conditions. - CDT has also planned to replace open cooling systems with close looped systems to conserve water resources.
Sea Level Rise	
- There will be minimal impact due to rising sea levels to the Rancho Cordova area, where CDT's Gold Camp Data Center facility is located.	- As of now, CDT has no plans of relocating or having additional facilities located in high risk coastal zones.

Climate Change in Department Plans and Programs

Plans that have incorporated climate	How incorporated
CDT Gold Camp Data Center 15-year Planning Timeline	The department uses full LCCA planning for current facility equipment replacement, maintenance and operations, and future facility design and operation. The current facility has been designed and has operational procedures in place to be able to adapt to climate change while continuing to meet its required mission critical role.

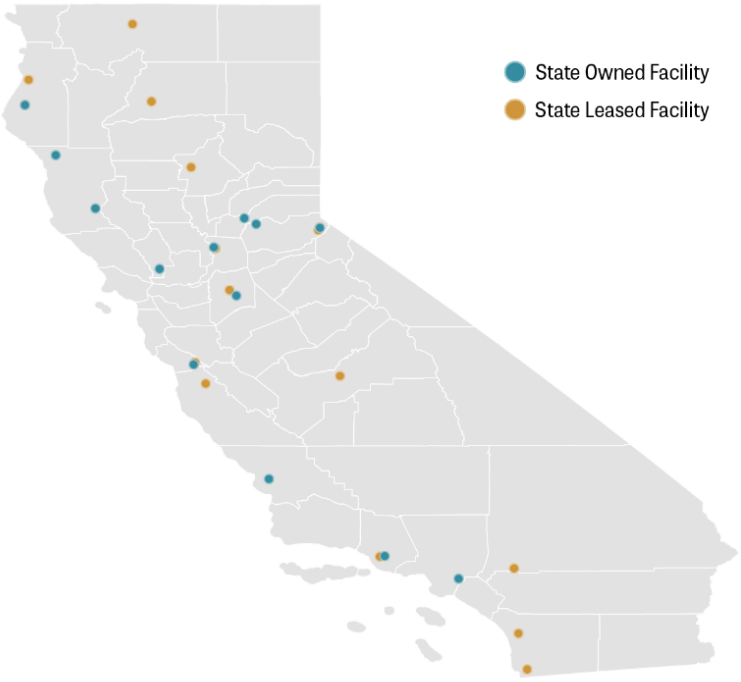
Programs that have incorporated climate	Plans or Programs that have yet to incorporate climate change
Revolving fund	*N/A*

Process Characteristics

Coordination and Collaboration
The California Department of Technology (CDT) identified relevant legislation and state resources through the Sustainability Roadmap. The department reports coordinating with local and regional agencies when applicable.
Organizational Capacity
It is unclear the full extent of CDT's organizational capacity due to the level of detail provided in the Sustainability Roadmap Adaptation Chapter.
Equity and Community Resilience
Potential impacts of the CDT data center facility on communities would be minor as the facility is not located in a disadvantaged community nor located in an urban heat island.
Metrics/Using Best Available Science
The data used to inform the Sustainability Roadmap Adaptation Chapter is from Cal-Adapt, CalEnviroScreen 3.0, and the Urban Heat Island Index tool. The department has stated that all future infrastructure investments will incorporate full life cycle cost accounting methodology including other non-fiscal intangible benefits.
Integrated Approach
The department has completed a Sustainability Roadmap, which includes both mitigation and adaptation chapters. It is unclear the level of analysis of or support for adaptation strategies that include mitigation co-benefits, or whether this will be a strategy in the future.
Natural Infrastructure
CDT did not report on any natural infrastructure strategies.

To see this department's full Sustainability Roadmap and for more information on how this department has addressed topics such as urban heat island, natural infrastructure, and life-cycle cost accounting, please visit the full document at https://green.ca.gov/home/roadmaps.

California Conservation Corps



Department Overview

The California Conservation Corps (CCC) is comprised of young adults, ages 18 to 25 (and veterans to age 29), who work on conservation projects on public lands in cities and rural areas. Projects range from restoring fish and wildlife habitat, to installing energy and water-efficient improvements, building trails, and improving forest health. As one of the state's emergency work forces, the CCC responds to fires, floods, pest infestations, earthquakes and oil spills. Through the department's Sustainability Roadmap Adaptation Chapter, the CCC makes strong commitments to adaptation planning and implementation actions.

Existing Facilities[†]	
Owned	13
Leased	46
Total Square Feet	701,339

Phase Evaluation

Awareness
From the evaluation of the department's Sustainability Roadmap Adaptation Chapter, the California Conservation Corps is considered to be between a maturity level 2 (developing) and 3 (standardizing) in the awareness phase. While this is the department's first time analyzing climate impacts to state facilities and operations, the Sustainability Roadmap provides an analysis of all relevant climate impacts. The department also includes a robust qualitative discussion of CCC's impacts on vulnerable communities and makes clear that both natural infrastructure solutions and integrated solutions to climate impacts are a priority.
Analysis
CCC is categorized between maturity level 1 (initiating) and 2 (developing) in the analysis phase. The department's Sustainability Roadmap Adaptation Chapter makes clear its commitment to coordination with local and regional agencies, and identifies the need for outcome-based metrics. The department establishes evaluation criteria for all projects in the sustainability roadmap.
Action
CCC is categorizes at a maturity level 1 (initiating) in the action phase. While the department has committed to numerous potential strategies in the Sustainability Roadmap Adaptation Chapter, the department is already implementing some strategies such as installing solar panels above parking lots and cool roofs.

[†] "Existing facilities" may include but are not limited to any of the following facility types: office buildings, parking spaces, storage facilities (refrigerated and nonrefrigerated), warehouses, electric vehicle charging stations, air monitoring stations, airports, marinas, greenhouses, forest management sites, field offices, laboratories, communication towers, etc.

Impacts and Strategy Summaries

Impacts	Strategies
Changing Temperature and Extreme Heat	
- Changing temperature also affects occupants' health and safety, as extreme temperatures may require closed buildings with little fresh air exchange, a factor in indoor air quality, and may contribute to the spread of airborne diseases.	- The CCC will plan as appropriate, provided funds are available, climate mitigating systems and structures. - Some of these systems and structures may include an increase in additional HV AC capacity, implementation of shade structures and solar canopies, planting shade trees, green roofs, bioswales, raingardens, and cool roof technology.
Changes in Precipitation	
- *No specific impacts were identified*	- To protect occupant health and provide safe working environment, consideration will need to be given to building materials, building envelop integrity, and overall interior and exterior moisture controls to avoid mold and maintain building and structural integrity. - Strategies that the CCC may employ to reduce the impact of changing precipitation on facility performance and to protect occupant health and safety include incorporation of rain water capture systems, natural infrastructure as earth berms and sub-catchment drainage areas, bioswales, raingardens, designing for increased surface water drainage and sewer systems, and leasing space outside of flood risk areas.
Sea Level Rise	
- The CCC San Diego facility above shows at risk from rising sea levels at a rise above 0.5 meters.	- The San Diego Center is a leased facility and can be relocated as necessary. The CCC will take changing climate and corpsmember population movement into consideration when planning any future move of the San Diego Center. - Actions that could be taken to minimize the risk of rising sea levels, until an actual facility move can occur, may include relocation of information technology facilities, ventilation systems, and warehouses; as well as flood protection through designing of green infrastructure, sub-catchment drainage areas, earth berm structures, and ultimately relocation of facilities out of low-lying areas as necessary.

Climate Change in Department Plans and Programs

Plans that have incorporated climate	How incorporated
New and Existing Facilities	In the design process for new and existing facilities
CCC Project Work	Departmental policy

Programs that have incorporated climate	Plans or Programs that have yet to incorporate climate change
N/A or unreported	*N/A or unreported*

Process Characteristics

Coordination and Collaboration
The CCC identified relevant legislation and state resources through the Sustainability Roadmap.
Organizational Capacity
The CCC reports a need for additional staff and funding to develop and manage projects that respond to flood risks that will be developed by the CCC Facilities Unit in conjunction with organizational stakeholders.
Equity and Community Resilience
The direct population served by the CCC are the actual Corpsmembers which includes young men and women aged 18 to 25 (up to 29 for Veterans), of all income and education levels, and numerous with young families. Many Corpsmembers coming from disadvantaged backgrounds may not have vehicles in which to evacuate, or means to pay for hotel rooms or lost wages from extreme climate events. The CCC provides work skills to the Corpsmembers. Approximately 30 percent of the members join the CCC without a high school diploma or high school equivalency certificate. Corpsmembers without a high school diploma are required to attend high school for a minimum of 10 hours a week after the workday. Approximately 17 percent of the CCC's facilities are located in disadvantaged communities. The CCC interacts with the community and provides services through some of the CCC programs such as the AmeriCorps VISTA Program, the Watershed Stewards Project, and the CCC Weatherization Partnership Program. Through CCC's development and promotion of mitigation and adaptation policies, education and public awareness in natural and green infrastructure solutions, programs for improving energy and weatherization measures, incorporation of programs that provide health co-benefits and adaptive capacity, urban greening, providing energy efficient housing and office environments, sustainable forestry programs, and consumption of locally-grown produce will help build resilience to environmental threats to human health, and provide for a more robust economy, changing climate, and extreme heat response.
Metrics/Using Best Available Science
The data used to inform the Sustainability Roadmap Adaptation Chapter is from Cal-Adapt, CalEnviroScreen 3.0, CoSMoS OCOF interactive maps, and the Urban Heat Island Index tool. The CCC reports a goal of applying benchmarking protocols to existing buildings to assist in identifying vulnerable building systems where future improvements can be made. The CCC has also committed to using screening criteria based on Building a Resilient California (EO B-30-15 guidance). The CCC has committed to the following prioritization: Priority shall be given to actions and approaches that both build climate preparedness and reduce greenhouse gas emission. Secondary consideration will be provided to those actions that protect the state's most vulnerable populations. Lastly, consideration will be given to actions and approaches providing the highest rate of savings. Where possible, actions and approaches shall be developed to provide flexibility and adaptability, to prepare for extreme and uncertain climate impacts. The CCC also hopes to employ full life-cycle cost accounting to evaluate and compare infrastructure investments and alternatives in the planning, design, and delivery of new CCC facilities in the near future.
Integrated Approach
The CCC has completed a Sustainability Roadmap, which includes both mitigation and adaptation chapters. The CCC has committed to prioritizing actions and approaches that both build climate preparedness and reduce greenhouse gas emissions.
Natural Infrastructure
The CCC program is dedicated to the direct conservation and enhancement of the state's natural resources through hands-on restoration projects. The CCC Salmon Restoration Program, Statewide Trails and Backcountry Trails Program, Clean Energy and Energy Efficiency Program, along with water conservation and fire hazard reduction work, contribute towards the restoration of public lands through fire hazard reduction, woodland and wetland habitat restoration. In prioritizing natural infrastructure of new CCC facility design and operations, priority shall be given to actions and approaches that both build climate preparedness and reduce greenhouse gas emission. Secondary consideration will be provided to those actions that protect the state's most vulnerable populations. Lastly, consideration will be given to actions and approaches providing the highest rate of savings. Where possible, actions and approaches shall be developed to provide flexibility and adaptability to prepare for extreme and uncertain climate impacts. For CCC's new Delta Center, natural infrastructure will be incorporated by means of landscaping including planting of trees, shrubs and grasses. In addition, the property is surrounded by wetlands that are being preserved and protected, which serve as a natural "air conditioner" for the campus.

To see this department's full Sustainability Roadmap and for more information on how this department has addressed topics such as urban heat island, natural infrastructure, and life-cycle cost accounting, please visit the full document at https://green.ca.gov/home/roadmaps.

Appendix B: Evaluation Framework Questions and Maturity Characteristics

Phase 1: Awareness	Questions
Phase Specific	• Does the plan include climate considerations? • Does the plan include a risk assessment that addresses climate change impacts? • Does the agency have separate plans that include climate considerations or strategies?
Coordination and Collaboration	• Have other existing relevant plans or efforts been identified? • Has the agency partnered with other entities (public agencies, local, regional, state, federal; research/academic, private sector, nonprofits) on climate adaptation initiatives?
Organizational Capacity	• Is there support or engagement from executive staff in the process? • Have existing resources been identified (staff, funding, existing data etc.)?
Equity and Community Resilience	• Are vulnerable communities identified/defined? • Were these communities engaged to help set priorities and community values? • Were community assets identified?
Metrics/Using Best Available Science	• What climate impacts are addressed? (Potentially create checklist here) • How were data gathered/used (consultant, in-house, public tools)? • Does the risk assessment quantitatively address climate impacts? • How did the agency choose which facilities to list? (Only include those with largest change in that impact, or was there consideration for locations with more critical operations or that serve specific populations/areas?)
Integrated approach	• Does the agency recognize the importance/benefits of integrated approaches?
Natural Infrastructure	• Does the risk assessment address the effects of climate change on natural systems?

Phase 1: Awareness	Maturity Characteristics		
	INITIATING	**DEVELOPING**	**STANDARDIZING**
Phase Specific	☐ The agency has completed a **Sustainability Roadmap** Adaptation Chapter which includes an initial assessment of climate risks	☐ The agency has completed a Sustainability Roadmap Adaptation Chapter *AND* ☐ The agency has **other plans** or documents that **discuss** climate change risks ☐ The plan(s) include a **further risk assessment** of particular assets or infrastructure within the agency's discretion or jurisdictional authority ☐ The agency is **in the process of furthering their research and strategies**.	☐ The agency has completed a Sustainability Roadmap Adaptation Chapter *AND* ☐ The agency has **other plans** or documents that address climate impacts that include **in-depth risk assessments** and have **strategies** in place to address these risks ☐ The plan(s) address **all or most climate impacts** for **all assets and infrastructure** within the agency's discretion or jurisdictional authority.
Coordination and Collaboration	☐ Relevant state policies goals are identified through the Sustainability Roadmap ☐ The Sustainability Roadmap includes reference to other relevant plans or documents produced by that agency.	☐ Relevant state policies goals are identified through the Sustainability Roadmap ☐ The Sustainability Roadmap includes reference to other relevant plans or documents produced by that agency. *AND* ☐ Other plans developed by other relevant agencies are identified	☐ Relevant state policies goals are identified through the Sustainability Roadmap ☐ Other state plans developed by other relevant agencies are identified *AND* ☐ Explicit policy connections are made between the Sustainability Roadmap and the above plans and policies. ☐ An active and ongoing effort to coordinate between these plans and policies is apparent or discussed.
Organizational Capacity	☐ It is unclear whether there is executive support for the pursuit of adaptation planning.	☐ There is some support and engagement from executive staff in the process, but it is unclear to what degree.	☐ There is clear support and engagement from executive staff in the process ☐ Executive staff advocate for resources to build capacity for adaptation related work. ☐ The agency has staff dedicated to climate change and incorporating climate science and adaptation strategies into all areas of work.
Equity and Community Resilience	☐ Disadvantaged communities are identified using CalEnviroscreen.	☐ Disadvantaged or vulnerable communities are identified using CES and other tools such as HPI, ROI, UHI, or another method that incorporated vulnerabilities with climate risk.	☐ Disadvantaged or vulnerable communities are identified using CES and other tools such as HPI, ROI, UHI, or another method that incorporated vulnerabilities with climate risk. ☐ The agency has taken steps to meaningfully engage with and involve identified communities in the planning process.

Metrics/Using Best Available Science	☐ Only some climate impacts are identified or assessed ☐ The Sustainability Roadmap is the agency's first time considering the risk of climate impacts.	☐ All climate impacts are identified and assessed to some degree. ☐ Some impacts are addressed to a higher degree in a separate document.	☐ All climate impacts are assessed and potential impacts are identified with a high level of expertise and resources invested. ☐ The assessment includes a quantitative assessment.
Integrated approach	☐ Agency completed State Sustainability Roadmap, which includes mitigation chapters. ☐ It is unclear whether integrated approaches to climate impacts are a priority within the adaptation chapter	☐ The agency discusses integrated approaches or strategies with mitigation co-benefits.	☐ The agency makes integrated approaches a clear part of their plan or strategy or has taken steps to evaluate strategies that have mitigation co-benefits.
Natural Infrastructure	☐ Agency completed State Sustainability Roadmap, which includes discussion of natural infrastructure. ☐ It is unclear whether natural infrastructure solutions are a priority.	☐ The agency discusses natural infrastructure solutions and completes them on an ad hoc basis.	☐ The agency makes clear that natural infrastructure is a priority or has taken steps to evaluate strategies for their effect on natural systems.

Phase 2: Analysis	**Questions**
Phase Specific	• Does the document include or reference an in-depth assessment that the agency has carried out? • Does the plan include climate adaptation or resiliency actions or strategies? • Are the actions planning or implementation related (e.g. are the actions related to conducting additional assessment or studies, or plan development.)? • Does the plan include prioritized/ recommended actions? • Is there commitment to implement on any near-term actions, or only recommendations? (don't discount far reaching or ambitious objectives)
Coordination and Collaboration	• Do selected options include actions that align with or include other local/regional plans or partners? • Do selected options promote collaborative approaches?
Organizational Capacity	• Were options assessed relative to gaps in organizational capacity? • Are there any existing capabilities (policies, plan, funding, etc.) identified that relate directly to climate change?
Equity and Community Resilience	• Were options assessed for equity and community resilience, including public health? • Were options selected and prioritized through outreach or community input? • Do the selected options address community vulnerabilities? • Do the selected options address community vulnerabilities?
Metrics/Using Best Available Science	• Are these actions or strategies prioritized against a set of evaluation criteria? - Feasibility (political, technicality, prioritization relative to other efforts) - Co-benefits - Unintended consequences - Fiscal or economic resources - Environmental impacts • Does the plan include a CBA or LCCA? • Has the agency considered the cost of inaction? • Were outcome-based metrics/evaluation criteria established?
Integrated approach	• Were options assessed for GHG impacts? • Were options with GHG co-benefits prioritized?

Natural Infrastructure	• Were natural or green infrastructure options explored or prioritized?

Phase 2: Analysis	**Maturity Characteristics**		
	INITIATING	**DEVELOPING**	**STANDARDIZING**
Phase Specific	☐ The plan includes an in-depth risk assessment. ☐ The plan or document includes **some strategies** ☐ The plan includes recommendations, but no commitments to actions or strategies.	☐ The plan includes an in-depth risk assessment. ☐ The plan or document includes some **strategies that are based on an in-depth risk assessment**. ☐ The plan includes commitment to implementation of strategies, or is implementing on an ad hoc basis.	☐ The plan includes an in-depth risk assessment. ☐ The plan or document includes strategies that address each **significant impact** ☐ The plan includes **commitments** to actions/strategies. ☐ The plan prioritizes actions/strategies using defined evaluation criteria
Coordination and Collaboration	☐ It is **unclear** whether the agency is coordinating or plans to coordinate with other state, local or regional agencies.	☐ The agency **is coordinating** or plans to coordinate with other state, local or regional agencies on an ad hoc basis	☐ The agency is coordinating with other state, local or regional agencies, and has a formalized process to accomplish this.
Organizational Capacity	☐ The document or plan has identified the need to build capacity but does not identify specific strategies.	☐ The document or plan has identified the need to build capacity and has identified some strategies to meet the need(s).	☐ The agency discusses organizational capacity in the document or plan, outlines the barriers to strategy creation or implementation of actions, and includes strategies to **overcome these barriers**. Identified and have comprehensive approach.
Equity and Community Resilience	☐ Equity, community resilience, and health are incorporated into the plan or document **qualitatively.**	☐ Equity, community resilience, and health are incorporated into the plan or document **qualitatively** and **quantitatively.**	☐ Equity, community resilience, and health are incorporated into the plan or document **qualitatively** and **quantitatively** *AND* were used to shape, prioritize and select strategies. ☐ Options were selected and prioritized through community input or outreach. ☐ Selected strategies have a clear positive impact on identified vulnerable communities.
Metrics/Using Best Available Science	☐ The agency discusses the need for outcome-based metrics and/or evaluation criteria to select strategies. ☐ The agency discusses outcomes in a qualitative way	☐ The agency has established metrics and evaluation criteria and has plans to use these as they develop strategies in the future. ☐ The agency discusses a benefit cost analysis	☐ The agency uses outcome-based metrics and has clear evaluation criteria that include the following: • Feasibility (political, technicality, prioritization relative to other efforts) • Co-benefits • Unintended consequences • Fiscal or economic resources • Environmental impacts ☐ The agency has included a CBA or LCCA as part of the analysis process. ☐ The agency has studied the costs of inaction quantitatively.

Integrated approach	☐ The agency discusses mitigation and adaptation in general terms	☐ The agency discusses the importance and benefits of integrated approaches. ☐ The agency has taken a qualitative approach to assess GHG reduction co-benefits and trade-offs	☐ The agency has assessed options for GHG reduction co-benefits and trade-offs. ☐ Where possible, options with GHG co-benefits were prioritized.
Natural Infrastructure	☐ The agency includes a **general** or **ad hoc** evaluation of strategies for natural and green infrastructure options. ☐ The plan document includes strategies that prioritize these solutions where possible.	☐ The agency includes a **robust** evaluation of strategies for natural and green infrastructure options. ☐ The plan or document includes strategies that prioritize these solutions where possible.	☐ The agency includes a robust evaluation of strategies for natural and green infrastructure options. ☐ The evaluation is fully integrated into strategies.

Phase 3: Action	Questions
Phase Specific	• Is there an implementation pathway for each of the adopted actions? • Is there allocated funding/investment for implementation? • Have responsible parties been identified for implementation of each action? • Is there a process to capture and share lessons learned? • Is the agency already implementing other strategies not included in this plan?
Coordination and Collaboration	• Are partners recognized for their role in implementation?
Organizational Capacity	• Is there a responsible party/person identified for each implementation action?
Equity and Community Resilience	• Have community co-benefits to implementation actions been identified/leveraged? • Are community members/partners engaged in implementation? (are they compensated for participation?)
Metrics/Using Best Available Science	• Is there a monitoring and evaluation process? • Does the monitoring process include both action "outputs" (e.g. implementation milestones and activities) and "outcomes" (e.g. metrics to track adaptation outcomes resulting from implementation)?
Integrated approach	• Do any implementation actions achieve GHG reducing benefits?
Natural Infrastructure	• Do any implementation actions include natural infrastructure solutions?

Phase 3: Action	Maturity Characteristics		
	INITIATING	**DEVELOPING**	**STANDARDIZING**
Phase Specific	☐ The agency is implementing some adaptation actions on an ad hoc or as needed basis.	☐ The agency has achieved two or more of the following: ☐ The agency plan includes an implementation pathway for each adopted action ☐ The agency has allocated funding/investment for implementation ☐ The agency has identified responsible parties for each action ☐ The agency has a process for capturing and sharing lessons learned.	☐ The agency has achieved all of the following: ☐ The agency plan includes an implementation pathway for each adopted action ☐ The agency has allocated funding/investment for implementation ☐ The agency has identified responsible parties for each action ☐ The agency has a process for capturing and sharing lessons learned.
Coordination and Collaboration	☐ The agency coordinates on an ad hoc basis with other entities.	☐ The agency has general agreements to coordinate with other entities.	☐ The agency has formal agreements to coordinate with other entities and stakeholders.
Organizational Capacity	☐ The agency has staff that are implementing some strategies on an ad hoc basis	☐ The agency has staff that are implementing some strategies on an ad hoc basis *AND* ☐ The agency has funding to support implementation.	☐ The agency has staff who are implementing strategies. ☐ The agency has ongoing funding to support implementation. ☐ The agency has staff dedicated to ongoing evaluation.
Equity and Community Resilience	☐ Some ad hoc adaptation actions have community co-benefits and address equity or health.	☐ Community co-benefits to implementation actions have been identified/leveraged	☐ Community members/partners are engaged in implementation.
Metrics/Using Best Available Science	☐ The agency has identified the need for monitoring and evaluation.	☐ The agency is developing a monitoring and evaluation process.	☐ The agency has included a monitoring and evaluation process. ☐ The monitoring process includes measuring both outputs and outcomes. ☐ The agency has a formalized process for ongoing evaluation.
Integrated approach	☐ Presence or not		
Natural Infrastructure	☐ Presence or not		

Appendix C: Sustainability Roadmap Adaptation Chapter Template (2017)

(Please see separate attachment)